SRI BALAJI VIDYAPEETH

(Deemed-to-be university declared u/s 3 of UGC act 1956)

INDIRA GANDHI INSTITUTE OF DENTAL SCIENCES

Pondy - Cuddalore Main Road
Pillaiyarkupam - Puducherry –607403.

B.D.S DEGREE COURSE

SYLLABUS, RULES AND REGULATIONS

2015 - 2016 ONWARDS

INDIRA GANDHI INSTITUTE OF DENTAL SCIENCES

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ANNEXURE

Rules, Regulations and Curriculum of this University have been formulated based on the Dental Council of India Regulation for the Degree of Bachelor of Dental surgery, 2007 (amended up to May 2015) and have been placed before the Standing Academic Board on 19.02.2016, consisting of the following members

Members of Board of Studies

Chairman	:	**Dr. Carounanidy Usha** Principal, IGIDS
Internal Members		**Head of the Departments of Basic sciences and Dental sciences**
External Members	:	**Dr. Lakshminarayanan.L,** Principal, Thai Moogambigai Dental College & Hospital, Golden Geroge Nagar, Mugappair,Chennai-600 107.
		Dr. Rajkumar.V Vice-Principal, SRM Dental College, Bharathi Salai, Ramapuram,Chennai-600 089.

Published after the approval of the standing Academic Board

Chairperson :

Dr. Carounanidy Usha, Prinicipal IGIDS

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Dr. A. Santhadevy, HOD, Oral Pathology & Microbiology

Dr. R. Sathyanarayanan, HOD, Oral & Maxillofacial Surgery

Dr. P.S. Manoharan, HOD, Prosthodontics & Crown & Bridge

Dr. M. Senthil Kumar, Prof. Orthodontics & Dentofacial Orthopedics

Dr. R. Sajeev, Prof, Paedodontics & Preventive Dentistry

Dr. S. Jeelani, Reader, Oral Medicine & Radiology

Invited Attendee :

Dr. S. Sivasenthil, Reader, Prosthodontics

SRI BALAJI VIDYAPEETH

(Deemed-to-be university declared u/s 3 of UGC act 1956)

INDIRA GANDHI INSTITUTE OF DENTAL SCIENCES

RULES AND REGULATIONS OF SRI BALAJI VIDHYAPEETH UNIVERSITY

In exercise of the powers conferred by Ministry of Human Resources Development Notification No.F.9-53/2005-u-3 dated 20/7/09 and after the declaration of Indira Gandhi Institute of Dental Sciences as constituent teaching units under the ambit of the Deemed University Sri Balaji Vidyapeeth, the Standing Academic Board hereby makes the following Rules and Regulations

These regulations shall be called :

THE RULES AND REGULATIONS FOR THE BACHELOR OF DENTAL SURGERY DEGREE COURSE (B.D.S) OF INDIRA GANDHI INSTITUTE OF DENTAL SCIENCES

They shall come into force from the academic year 2016-2017 session. The regulations and the syllabus are subject to modification by the Standing Academic Board from time to time.

Vision and Mission StateMent of sBV

Vision

"To be in the forefront of higher education and to give the country the high calibre manpower"

Mission

- To provide collegiate education up to post-doctoral programs.
- To ensure high standard of behaviour and discipline amongst our student community.
- To produce Medical Professionals who are concerned with determinants of disease, disability and premature death and the organization of appropriate health services including Health Education and policy.
- To create a climate of joyful learning.
- To serve in particular the poor and minority population irrespective of caste and creed, who suffer disproportionately from illness and disability.
- To impart skills in students which will make them successful in their endeavours.
- To provide meaningful industrial education, research and training at all levels.
- To offer a wide range and flexibility of options especially in the areas of non-formal and continuing education.
- To set a high standard of professional conduct and ethics for staff and students.

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The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and reasonable attitudes which are required for carrying out all activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate also should understand the concept of community oral health education and be able to participate in the rural health care delivery programs existing in the country.

OBJECTIVES

The objectives are dealt under three headings a. Knowledge b. Skills and c. Attitudes.

a. Knowledge

The graduate should acquire the following during the period of training:

1. Adequate knowledge of the scientific foundations on which Dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and be able to evaluate and analyze scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general state of health and also bearing on physical and social well-being of the patient.
3. Adequate knowledge of clinical disciplines and methods which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive diagnostic and therapeutic aspects of Dentistry.
4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of the constitution, biological function and behavior of persons in health and sickness as well as the influence of the natural and social environment on the state of health in so far as it affects Dentistry.

b. Skills

A graduate should be able to demonstrate the following skills necessary for practice of Dentistry:

1. Able to diagnose and manage various common dental problems encountered in general dental practice keeping in mind the expectations and the right of the society to receive the best treatment available wherever possible.
2. Acquire the skill to prevent and manage complications if encountered while carrying out various surgical and other procedures.
3. Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help prevent oral diseases whenever possible.
5. Competent in the control of pain and anxiety during dental treatment.

c. Attitudes

A graduate should develop during the training period the following attitudes:

1. Willing to apply the current knowledge of Dentistry in the best interest of the patients and the community.

2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs of the community.
4. Willing to participate in the Department of Dental Education (DDE) program to update the knowledge and professional skill from time to time.
5. Able to participate in the implementation of the National Oral Health Program.

At the completion of the undergraduate training program the graduates shall be competent in the following

1. GENERAL SKILLS

- Apply knowledge and skills in day to day practice
- Apply principles of ethics
- Analyze the outcome of treatment
- Evaluate the scientific literature and information to decide the treatment
- Participate and involve in professional bodies
- Self-assessment and willingness to update the knowledge and skills from time to time
- Involvement in simple research projects
- Minimum computer proficiency to enhance knowledge and skills
- Refer patients for consultation and specialized treatment
- Basic study of forensic odontology and geriatric dental problems

2. PRACTICE MANAGEMENT

- Evaluate practice location, population dynamics and reimbursement mechanism
- Co-ordinate and supervise the activities of allied dental health personnel
- Maintain all records
- Implement and monitor infection control and environmental safety program
- Practice within the scope of one's competence

3. COMMUNICATION AND COMMUNITY RESEOURCES

- Assess patients goals, values and concerns to establish rapport and guide patient care
- Able to communicate freely, orally and in writing with all concerned
- Participate in improving the oral health of the individuals through community activities

4. PATIENT CARE – DIAGNOSIS

- Obtaining patient's history in a methodical way
- Performing thorough clinical examination
- Selection and interpretation of clinical, radiological and other diagnostic, information obtaining appropriate consultation
- Arriving at provisional, differential and final diagnosis

5. PATIENT CARE – TREATMENT PLANNING

- Integrate multiple disciplines into an individual comprehensive sequences treatment plan using diagnostic and prognostic information
- Able to order appropriate investigations

6. PATIENT CARE – TREATMENT

- Recognition and initial management of medical emergencies that may occur during dental treatment
- Perform basic cardiac life support
- Management of pain including post-operative
- Administration of intra muscular and venous injections
- Administration all forms of local anesthesia
- Prescription of drugs, pre-operative, prophylactic and therapeutic requirements

- Uncomplicated extraction of teeth
- Trans alveolar extractions and removal of simple impacted teeth
- Minor oral surgical procedures
- Management of oral facial infections
- Simple orthodontic appliance therapy
- Taking, processing and interpretation of various types intra oral radiographs
- Various kinds of restorative procedures using different materials available
- Removable and fixed prosthodontics
- Various kinds of periodontal therapy

I. ELIGIBILITY CRITERIA

Age criteria

The candidate shall have completed the age of 17 years at the time of admission or will complete this age on 31st December of the year in which he/she seeks admission.

Qualification criteria

The candidate shall have passed

1. The higher secondary examination or the Indian school certificate examination which is equivalent to 10+2 higher secondary examination comprising of Physics, Chemistry, Biology and Mathematics or any other elective subjects with English at a level not less than the core course for English as prescribed by the National Council for Educational Research and training after the introduction of the 10+2+3 years educational structure as recommended by the national committee on education; introduction of the 10+2+3 years educational structure as recommended by the National committee on education;

Note : Where the course content is not as prescribed for 10+2 education structure of the national committee, the candidates will have to undergo a period of one year pre-professional training before admission to the dental colleges.

OR

2. The intermediate examination in science of an Indian University/ Board or other recognized examining body with physics, chemistry and biology which shall include a practical test in these subjects and also English as a compulsory subject

OR

3. The pre-professional /pre-medical examination with physics, chemistry and biology after passing either the higher secondary school examination, or the pre-university or an equivalent examination. The pre-professional/pre-medical examination shall include a practical test in physics, chemistry and biology and also English as a compulsory subject

OR

4. The first year of the three years degree course of a recognized university, with physics, chemistry and biology including a practical test in three subjects provided the examination is a "University Examination" and candidate has passed 10+2 with English at a level not less than a core course

OR

5. BSC examination of Indian University, provided that he/she has passed the BSc examination with not less than 2 of the following subjects Physics, Chemistry, Biology (Botany, Zoology) and further that he/she has passed the earlier qualifying examination with the following subjects Physics, Chemistry, Biology and English

OR

6. Any other examination which, in scope and standard is found to be equivalent to the intermediate science examination of an Indian university/board, taking physics, chemistry and biology including practical test in each of these subjects and English.

Qualifying marks criteria

1. In case of admission on the basis of qualifying examination under clause based on merit, candidate for admission to BDS course must have passed in the subjects of Physics, Chemistry, Biology & English individually and must have obtained a minimum of 50% marks taken together in Physics,

Chemistry, Biology at the qualifying examination. In respect of candidates belonging to scheduled castes, Scheduled tribes or other backward classes, the marks obtained in Physics, Chemistry, Biology taken together in qualifying examination be 40% instead of 50% as above and must have passing marks in English.

2. In case of admission on the basis of competitive entrance examination, a candidate must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks in Physics, Chemistry and Biology taken together at the qualifying examination and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes notified by the Government, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above. (Vide Amendment to DCI Regulations, 2007, notified in Gazette of Government of India dated 10.09.2007).

II. Duration of Course:

The undergraduate dental training programme leading to BDS degree shall be of 5 years with 240 teaching days in each academic year. **The BDS course shall be of four academic years plus one year compulsory internship program.** During this period the student shall be required to have engaged in full time study at a dental college recognised or approved by the Dental Council of India.

III. MIGRATION

Migration from one dental college to another is not a right of a student. However, migration of students from one dental college to another dental college in India may be considered by the Dental council of India. Only in exceptional cases on extreme compassionate grounds, provided the following criteria are fulfilled. Routine migrations on other ground shall not be allowed:

- Both the colleges, i.e. one at which the student is studying at present and one to which migration is sought, are recognized by the Dental Council of India
- The applicant candidate should have passed first BDS university examination
- The applicant candidate submits his application for migration, complete in all respects, to all authorities concerned within a period of one month of passing the first professional Bachelor of dental surgery (BDS) examination
- The applicant candidate must submit an affidavit stating that he/she will pursue 240 day of prescribed study before appearing at 2nd professional bachelor of dental surgery examination at the transferee dental college, which should be duly certified by the registrar of the concerned university in which he/she is seeking transfer. The transfer will be applicable only after receipt of the affidavit.

Note 1:

(i) Migration is permitted only in the beginning of IInd year BDS Course in recognised institutions.

(ii) All applications for migration shall be referred to Dental Council of India by the college authorities. No Institution/University shall allow migration directly without the prior approval of the Council.

(iii) Council reserves the right not to entertain any application which is not under the prescribed compassionate grounds and also to take independent decisions where applicant has been. allowed to migrate without referring the same to the Council.

Note 2: "Compassionate ground criteria:
(i) Death of supporting guardian.
(ii) Disturbed conditions as declared by Government in the Dental College area.

TITLES OF SUBJECTS

First Year

1. General Human Anatomy including Embryology and Histology
2. General Human Physiology and Biochemistry, Nutrition and Dietetics
3. Dental Anatomy, Embryology and Oral Histology
4. Dental Materials
5. Preclinical Prosthodontics and Crown & Bridge

Second Year

1. General Pathology and Microbiology
2. General and Dental Pharmacology and Therapeutics
3. Dental Materials
4. Preclinical Conservative Dentistry
5. Preclinical Prosthodontics and Crown & Bridge
6. Oral Pathology & Oral Microbiology

Third Year

1. General Medicine
2. General Surgery
3. Oral Pathology and Oral Microbiology
4. Conservative Dentistry & Endodontics
5. Oral & Maxillofacial Surgery
6. Oral Medicine and Radiology
7. Orthodontics & Dentofacial Orthopedics
8. Pediatric & Preventive Dentistry
9. Periodontology
10. Prosthodontics and Crown & Bridge

Final Year

1. Orthodontics & Dentofacial Orthopedics
2. Oral Medicine and Radiology
3. Paedodontics & Preventive Dentistry
4. Periodontology
5. Oral & Maxillofacial Surgery
6. Prosthodontics and Crown and Bridge
7. Conservative Dentistry & Endodontics
8. Public Health Dentistry

Hours of instruction

Subject	Lecture Hours	Practical hours	Clinical Hours	Total Hours
General Human Anatomy Including Embryology, Osteology and Histology	100	175	-----	275
General Human Physiology	120	60	------	180
Biochemistry	70	60	------	130
Dental Materials	80	240	------	320
Dental Anatomy, Embryology and Oral Histology	105	250	------	355
Dental Pharmacology & Therapeutics	70	20	------	90
General Pathology	55	55	------	110
General Microbiology	65	50	------	115
General Medicine	60	------	90	150
General surgery	60	------	90	150
Oral Pathology & Microbiology	145	130		275
Oral Medicine & Radiology	65	------	170	235
Prosthodontics & Preventive Dentistry	65	------	170	235
Orthodontics & Dento-facial Orthopedics	50	------	170	220
Periodontology	80	------	170	250
Oral & Maxillofacial Surgery	70	------	270	340
Conservative Dentistry & Endodontics	135	200	370	705
Prosthodontics & Crown & Bridge	135	300	370	805
Public Health Dentistry	60	------	200	260
Total	**1590**	**1540**	**1989**	**5200**

Note: There should be a minimum of 240 teaching days every academic year consisting of 8 working hours including one hour of lunch break.

Internship-240x8 hours=1920 clinical hours.

Subjects in First year BDS and hours of instruction

Subject	Lecture Hours	Practical hours	Clinical Hours	Total Hours
General human anatomy including embryology, osteology and histology	100	175	------	275
General human physiology	120	60	------	180
Biochemistry	70	60	------	130
Dental materials	20	40	------	60
Dental anatomy, embryology and oral histology	105	250	------	355
Pre-clinical prosthodontics & crown and bridge	------	100	------	100
Total	**415**	**685**	**------**	**1100**

Subjects in Second year BDS and hours of instruction

Subject	Lecture Hours	Practical hours	Clinical Hours	Total Hours
General and Dental pharmacology & therapeutics	70	20	------	90
General pathology	55	55	------	110
Microbiology	65	50	------	115
Dental materials	60	200	------	260
Oral pathology & microbiology	25	50	------	75
Pre-clinical prosthodontics & crown bridge	25	200	------	225
Pre-clinical conservative dentistry	25	200	------	225
Total	**325**	**775**	**------**	**1100**

Subjects in Third year BDS and hours of instruction

Subject	Lecture Hours	Practical hours	Clinical Hours	Total Hours
General medicine	60	------	90	150
General surgery	60	------	90	150
Oral pathology & Microbiology	120	80		200
Oral medicine & Radiology	20	------	70	90
Prosthodontics and preventive dentistry	20	------	70	90
Orthodontics & Dento-facial Orthopedics	20	------	70	130
Periodontology	30	------	70	90
Oral and maxillofacial surgery	20	------	70	90
Conservative dentistry & endodontics	30	------	70	100
Prosthodontics and crown & bridge	30	------	70	100
Total	**410**	**80**	**670**	**1160**

Subjects in Final year BDS and hours of instruction

Subject	Lecture Hours	Practical hours	Clinical Hours	Total Hours
Prosthodontics and crown & bridge	80	------	300	380
Oral Medicine and radiology	45	------	100	145
Periodontology	50	------	100	150
Public Health dentistry	60	------	200	260
Conservative Dentistry and Endodontics	80	------	300	380
Oral and maxillofacial surgery	50	------	200	250
Orthodontics and dento-facial orthopedics	30	------	100	130
Pediatric and preventive dentistry	45	------	100	145
Total	**440**	------	**1400**	**1840**

Evaluation is achieved by 2 processes

a. Formative or internal assessment
b. Summative or university examinations

Formative evaluation is done through a series of tests and examinations conducted periodically by the institution. Summative evaluation is done by the University through examinations conducted at the end of the specified course

METHODS OF EVALUATION:

Evaluation may be achieved by the following tested methods

1. Written test
2. Practicals examinations
3. Clinical examinations
4. Viva voce

SCHEME OF EXAMINATIONS

1. The University shall conduct two examinations annually at an interval of not less than 6 months as notified by the university from time to time.

2. The scheme of examination of B.D.S. course shall be divided into 4 professional examinations, viz., I.B.D.S. Examination at the end of first academic year, II B.D.S. at the end of second academic year, III B.D.S. at the end of third academic year and Final year B.D.S. examination at the end of fourth academic year.

3. A pass in all 8 subjects is mandatory for completion of the final year BDS course before undergoing internship program.

4. Any student who does not clear the BDS course in all the subject within a period of 9 years, including one year Compulsory Rotatory paid Internship from the date of admission shall be discharged from the course.(7th Amendment to DCI Regulations, 2015, notified in Gazette of Government of India dated 23.05.2015).

ELIGIBILITY CRITERIA TO APPEAR IN UNIVERSITY EXAMINATIONS

A candidate who satisfies the requirement of attendance, progress and conduct as stipulated by the university shall be eligible to appear in the University examination. Certificate to the above effect should be produced from the Head of the Institution along with the application for examination and the prescribed fee.

University shall organise admission timings and the admission process in such a way that the teaching starts from the 1st day of August in each academic year

1. Attendance percentage requirement:

a. Each academic year consist of 240 days of teaching for 8 hours including 1 hour of lunch break. Every candidate shall have attendance of 80% in theory classes and 80% individually in Practicals / Clinicals in each subject in each year.

b. In case of subject in which the instructional program extends more than one academic year and hence there is no University Examination in the subject during that year (i.e. non- exam going subjects), the attendance requirement shall not be less than 80% in Lectures and 80% in Practical / Clinical classes. At the time of appearing for the professional examination in the subject the candidate should satisfy the condition as above.

c. Candidate who is declared failed in any year, will be continuing their classes till the next exam to gain similar attendance percentage. This is however not applicable for a candidate who has carry-over subject.

2. Internal assessment marks requirement:

a. Formative assessment in the form of internal assessments will done throughout the program. Quarterly internal assessment exams will be held. A minimum of three internal assessments will be held. The average of these three tests will be taken for the internal assessment marks. Apart from this a model exam will be conducted. Clinical or practical exams, clinical records and periodic assignments will also be assessed. Ten percent of the total marks in each subject separately for theory and practical / clinical examination separately should be set aside for the internal assessment examination.

b. A minimum of 50% of internal assessment marks in theory and clinicals individually is mandatory to be eligible to appear in the final exam.

c. Candidate who has failed in a particular subject or subjects should take the internal assessment examination in failed subject/s. If this new internal assessment marks is better than the previous it will be given due consideration.

UNIVERSITY WRITTEN EXAMINATION

1. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum marks of 70.

2. The theory paper will be evaluated by one internal and one external examiner

3. Syllabus with system weightage, and blueprint of the question paper as per the must know / diserable to know and nice to know, topic distribution will be provided to the paper setter.

4. Each theory paper will consist of two sections with the following marks distribution:

Section A	1 Long answer question 10marks	2 Short answer questions 5 marks each	5 very short answer questions 2 marks each	Total 35 marks
Section B	1 Long answer question 10marks	2 Short answer questions 5 marks each	5 very short answer questions 2 marks each	Total 35 marks
Grand Total				**70 marks**

UNIVERSITY PRACTICAL AND CLINICAL EXAMINATION

The specific scheme of clinical and practical examinations, the type of clinical procedures / experiments to be performed and marks allotted for each are to be discussed and finalized by the Chairman and other examiners and it is to be published prior to the conduct of the examinations along with the publication of the time table for the practical examinations. This scheme should be brought to the notice of the external examiner as and when the examiner reports. The practical and clinical examiner appointed from other universities preferably outside the state. Each candidate should be evaluated by each examiner independently and marks computed at the end of the examination.

Record book : The candidate should be given credit for his records based on the scores obtained in the record.

UNIVERSITY ORAL EXAMINATION

Oral examination will be conducted by both examiners individually. Twenty marks is allotted for viva voce and that can be divided equally amongst the examiners.

UNIVERSITY EXAMINATIONS SUBJECTS

I BDS exams will be on the following subjects

1. General anatomy including embryology and histology
2. General human physiology
3. Bio chemistry, Nutrition and Dietetics
4. Dental anatomy, embryology and oral hitology

II BDS exams will be on the following subjects

1. General pathology
2. General microbiology
3. Dental material
4. General and dental pharmacology and therapeutics
5. Pre-clinical conservative – only practical and viva voce
6. Pre-clinical prosthodontics – only practical and viva voce

III BDS exams will be on the following subjects

1. General medicine
2. General surgery
3. Oral pathology and microbiology

IV BDS exams will be on the following subjects

1. Public Health dentistry
2. Periodontology
3. Orthodontics and Dentofacial orthopedics
4. Oral Medicine and Radiology
5. Oral & Maxillofacial Surgery
6. Conservative dentistry and endodontics
7. Prosthodontics and crown & Bridge
8. Pediatric & Preventive Dentistry

MARKS DISTRIBUTION IN EXAMINATION SUBJECTS:

Each subject shall have a maximum of 200 marks.
Theory : 100
Practical /Clinical : 100

University examinations that include theory and Practicals / clinicals

THEORY	Internal assessment	10 marks
	Written exam	70 marks
	Viva voce	20 marks
	Total	**100 marks**
PRACTICALS / CLINICALS	Internal assessment	10 marks
	Practicals/ clinicals	90 marks
	Total	**100 marks**

Practical and viva only in University examination (Pre-clinical Prosthodontia and pre-clinical Conservative Dentistry examinations)

Each subject shall have a maximum of 100 marks.

Internal assessment	20 marks
Practicals	60 marks
Viva voce	20 marks
Total	**100 marks**

PASS/ FAIL CRITERIA IN UNIVERSITY EXAMINATIONS

For declaration of pass in a subject, a candidate shall secure 50% marks in the University examination both in Theory and Practical/Clinical examinations separately, as stipulated below:

1. For pass in Theory, a candidate shall secure 50% marks in aggregate in University theory examination i.e. marks obtained in University written examination, viva voce examination and internal assessment (theory) combined together i.e. fifty out of One hundred marks.

2. In the University Practical/clinical examination, a candidate shall secure 50% marks in aggregate i.e. Practical /Clinical and Internal Assessment combined together i.e. 50/100 marks.

3. In case of pre-clinical Prosthetic Dentistry and Pre-clinical Conservative Dentistry in II BDS, were there is no written examination, minimum for pass is 50% of marks in Practical and Viva voce combined together in University Examination including Internal Assessment i.e. 50/100 marks

4. Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% and above is eligible for Distinction. Only those candidates who pass the whole examination in the first attempt will be eligible for distinction or class.

5. Any student who fails in one subject in an examination is permitted to go to the next higher class and appear for the said subject and complete it successfully before he is permitted to appear for the next higher examination.

6. Any student who fails in more than one subject in an examination will not be permitted to go to the next higher class until he completes it successfully. However they should continue to attend the classes of the same year to gain adequate attendance percentage and attend all the internal assessment exams that are conducted regularly, to improvise upon their previous internal assessment marks.

7. **Moderation :** Moderation process will award only up to 5 marks to candidates who fail only in one subject, provided they have appeared in exams for all the subjects in that year.

8. **Re-Totaling & Re-Evaluation :** Candidates can apply for Re-totaling and Re-evaluation of the theory paper after paying the stipulated fee within the prescribed time as determined by the university norms.

I YEAR SYLLABUS

General Human Anatomy Including Embryology, Osteology and Histology

Number of hours prescribed by DCI		
Theory hours	Practicals hours	Total
100	175	275

GOAL

The students should gain the knowledge and insight into, the functional anatomy of the normal human head and neck, functional histology and an appreciation of the genetic basis of inheritance and disease, and the embryological development of clinically important structures. So that relevant anatomical & scientific foundations are laid down for the clinical years of the BDS course.

OBJECTIVES

KNOWLEDGE

- Know the normal disposition of the structures in the body while clinically examining a patient and while conducting clinical procedures.
- Know the anatomical basis of disease and injury.
- Know the microscopic structure of the various tissues, a pre-requisite for understanding of the disease processes.
- Know the nervous system to locate the site of lesions according to the sensory and or motor deficits encountered.
- Have an idea about the basis of abnormal development, critical stages of development, effects of teratogens, genetic mutations and environmental hazards.
- Know the sectional anatomy of head neck and brain to read the features in radiographs and pictures taken by modern imaging techniques.
- Know the anatomy of cardio-pulmonary resuscitation

SKILLS

- To locate various structures of the body and to mark the topography of the living anatomy.
- To identify various tissues under microscope.
- To identify the features in radiographs and modern imaging techniques.
- To detect various congenital abnormalities.

SYLLABUS
Theory – 100 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
	GENERAL ANATOMY			
1	Anatomical position Anatomical planes, anatomical terms	1%	1 hr	M
2	Part of a long bone, Types of epiphysis, blood supply	2%	2 hrs	M
3	Classification of bones with example	1%	1 hr	M
4	Classification of joints with example	1%	1hr	M
5	Structure of a synovial joint	1%	1 hr	M
6	Classification of muscles with example	1%	1 hr	M
7	Structure of a neuron with classication, neuropilia	1%	1hr	M
	GROSS ANATOMY			
8	Scalp and Face Scalp Muscles of face Blood supply of face Nerve supply of face	4%	4hrs	M
9	Lacrimal apparatus	1%	1hr	M
10	Parotid region	1%	1hr	M
11	Temporal and Infratemporal fossa Muscles of mastication, Maxillary artery Mandibular nerve, Temporomandibular joint	4%	4hrs	M
12	Pterygopalatine fossa Maxillary nerve Pterygopalatine ganglion	2%	2hrs	M
13	Cranial cavity Dural venous sinuses- Cavernous sinus Dural folds	2%	2hrs	M
14	The orbit and its contents Extraocular muscles Ciliary ganglion Branches of ophthalmic artery	2%	2hrs	D

15	Nasal cavity and paranasal air sinus Lateral wall of nose Medial wall of nose Paranasal air sinuses-Maxillary air sinus	6%	3hrs	M
16	Soft palate Muscles of soft palate	1%	1hr	M
17	Tongue Muscles of tongue Nerve supply of tongue Lymphatic drainage of tongue Middle ear Boundaries and contents of middle ear Tympanic memebrane Auditory tube	3%	3hrs	M
18	Triangles of neck Carotid triangle- Boundaries and its contents Digastric triangle-boundaries and contents Posterior triangle – boundaries and its contents Suboccipital triangle – boundaries and its contents	4%	4hrs	M
19	Deep cervical fascia of neck Investing layer of deep cervical fascia Pretracheal fascia Carotid sheath	2%	2hrs	M
20	Blood vessels of neck External carotid artery and its branches External and internal jugular vein Subclavian artery and its branches	2%	2hrs	D
21	Muscles of neck	1%	1hrs	N
22	Submandibular region Submandibular gland Structures on hyoglossus muscle Submandibular region	1%	1hr	M
23	Deep structures of neck Thyroid gland Thymus Trachea and oesophagus	2%	2hrs	M
24	Pharynx Nasopharynx Palatine tonsil Piriform fossa	2%	2hrs	M
25	Larynx Cartilages of larynx Muscles of larynx Laryngeal cavity Rima glottidis	2%	2hrs	D

NEURO ANATOMY				
26	Cranial nerves V , VII, IX , X , XI , XII	3%	3hrs	M
27	Cervical spinal nerves & cervical plexus	1%	1 hr	M
28	Brain stem	1%	1 hr	M
29	CSF circulation	1%	1 hr	M
30	Blood supply of brain Circle of willis	1%	1 hr	M
31	White matter of brain	2%	2hrs	M
EMBRYOLOGY				
32	General embryology Spermatogenesis , oogenesis, fertilization, implantation, germ layer formation, blastocyst, primitive streak , notochord, somites, neural crest cells, placenta	6%	6hrs	M
33	Derivatives of branchial apparatus pharyngeal arches, pouches, clefts. Development of tongue Development of thyroid gland Development of palate and its anomalies Development of face and its anomalies Development of jaws and its anomalies Development of oral cavity Development nasal cavity Development of paranasal sinuses Development of salivary glands Development of hypophysis cerebri Development of tempero mandibular joint	10%	10hrs	M
HISTOLOGY				
34	Introduction of cytology & histology	1%	1 hr	M
35	Basic tissues Epithelial tissue –simple & compound	2%	2 hrs	M
36	Connective tissue Cells, fibres – collagen, elastic, reticular	1%	1 hr	M
37	Cartilage-hyaline, fibrocartilage, elastic	1%	1 hr	M
38	Spongy & compact bone TS & LS	1%	1 hr	M
39	Muscular tissue Skeletal, cardiac & smooth	1%	1 hr	M

40	Nervous tissue- pheripheral nerve & ganglia	1%	1 hr	M
41	Blood vessels Artery & vein	1%	1 hr	M
42	Glands Serous, mucous, mixed salivary glands	1%	1 hr	M
43	Lymphoid tissue – lymph node, palatine tonsil, thymus & spleen	1%	1 hr	M
44	Skin Hairy & non hairy	1%	1 hr	M
GENECTICS				
45	Chromosomes & its disorders down's syndrome, klinefelters syndrome, turners syndrome	2%	2 hrs	M
46	Karyotyping , barebody	1%	1 hr	M
47	Gene mutation , genetic counselling , modes of inheritance	2%	2 hrs	M

Practicals : no: of hours = 175

S.No	Practical exercises	Hours	Observe/ assist/ perform
1	Introduction-Anatomical position, planes,interpretation of anatomical terms,elements of anatomy including fascia, muscles, blood vessels, nerves, joints and lymph vessels	10 hrs	observe
2	Osteology of head and neck Skull-exterior,norma and vault, interior-cranial fossae, individual bones- mandible, maxilla, frontal, parietal, occipital, temporal,cervical vertebra	20hrs	observe
3	Surface anatomy	10hrs	perform
4	Soft tissue dissection	60hrs	perform
5	Demonstration of general and systemic histology slides	60hrs	Perform
6	Demonstration of embryology models	15hrs	observe

Scheme of examination

1. Theory Exams : 70 marks

   Section A : 35 marks
   Section B : 35 marks

   Internal assessment: 10 marks
   Viva voce : 20 marks
   Total = 100

2. Practical Examination : 90 marks
   Practical Internal Assessment : 10 marks
   Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A : Gross anatomy of Head region, Neuroanatomy, Systemic histology, Systemic embryology

Section B : Gross anatomy of neck region, General anatomy, General histology, general embryology

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

Blue print of question paper

SECTION A [Gross anatomy of Head region, Neuroanatomy, Systemic histology, Systemic embryology] Model 1: If LAQ is asked from Gross Anatomy then the pattern is as follows					
SL NO	**TOPICS**	**LAQ [1X10]**	**SAQ [3X5]**	**VSAQ [5X2]**	**5 MARKS**
1	Gross anatomy Dangerous layer of scalp (VSAQ)			1	2
2	Gross Anatomy Dural venous sinuses(Long answer) Lacrimal apparatus (VSAQ) Nerve supply of tongue(VSAQ)	1		2	14
3	Neuroanatomy Facial nerve (SAQ)		1		5
4	Systemic embryology Derivatives of first and second pharyngeal arch(SAQ)		1		5
5	Gross anatomy Name the extra ocular muscles with nerve supply(VSAQ)			1	2
6	Systemic histology Histology of thyroid gland(SAQ)		1		5
7	Genetics Barr body(VSAQ)			1	2
SECTION B [Gross anatomy of neck region] If one LAQ is from Gross Anatomy Of Neck then the pattern is as follows					
1.	Gross anatomy Thyroid gland(LAQ) Midline structures in the neck(VSAQ)	1		1	12
2.	General embryology Spermatogenesis (SAQ)		1		5
3.	Gross anatomy Wry neck or torticollis (VSAQ)			1	2
4.	General histology Histology of cardiac muscle(SAQ)		1		5
5.	Gross anatomy Subdivisions of pharynx(VSAQ)			1	2
6.	General anatomy Types of Epiphysis with example (SAQ)		1		5
7.	Gross anatomy Branches of External carotid artery (VSAQ)			1	2

8.	Gross anatomy Structures present on hyoglossus(VSAQ)			1	2

Model : 2

SECTION A **[Gross anatomy of Head region, Neuroanatomy, Systemic histology, Systemic embryology]** **If one LAQ is fromGross AnatomyOf Head then the pattern is as follows**					
SL NO	**TOPICS**	**LAQ [1X10]**	**SAQ [3X5]**	**VSAQ [5X2]**	**5 MARKS**
1	Gross anatomy Name the muscles of soft palate with nerve supply(VSAQ)			1	2
2	Systemic histology Histology of trachea (SAQ) Gross anatomy Middle meningeal artery(VSAQ)		1	2	9
3	Gross anatomy(LAQ)	1			10
4	Genetics Down's syndrome (SAQ)		1		5
5	Gross anatomy Structures radiating from parotid gland (VSAQ)			1	2
6	Neuroanatomy Blood supply of spinal cord(SAQ)		1		5
7	Gross anatomy Boundaries of maxillary air sinus (VSAQ)			1	2
SECTION B **[Gross anatomy of neck region, General anatomy, General histology, General embryology]** **If one LAQ is fromGross anatomy of neck region then the pattern is as follows**					
1.	Gross anatomy Larynx (LAQ) Waldeyer's ring (VSAQ)	1		1	12
2.	General histology Histology of hyaline cartilage(SAQ)		1		5
3.	Gross anatomy Ansacervicalis(VSAQ)			1	2
4.	General anatomy Structure of a typical synovial joint(SAQ)		1		5
5.	Gross anatomy Ligament of berry (VSAQ)			1	2
6.	Gross anatomy Palatine tonsil (SAQ)		1		5

7.	Gross anatomy Killian's dehiscence (VSAQ)			1	2
8.	General embryology Implantation (VSAQ)			1	2

(UNIVERSITY MODEL QUESTION PAPER)
I BDS EXAMINATION
ANATOMY

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

Section – A (35 Marks)

Long Answer Question **1x10=10**

1) Describe Dural venous sinuses under following headings
   a) Formation
   b) Classification
   c) Boundaries and contents of Cavernous sinus with applied anatomy (2+3+5)

Short Answer Questions **3x5=15**

2) Facial nerve – nuclei of origin, intra cranial course
3) Muscles of Mastication
4) Histology of Thyroid gland

Very Short Questions **5x2=10**

5) Name the components of Lacrimal apparatus
6) Dangerous area of scalp
7) Derivatives of first pharyngeal arch
8) Nerve supply of Tongue
9) Barr body

Section – B (35 Marks)

Long Answer Question **1x10=10**

10) Describe Thyroid gland under following headings
    a) Location
    b) Parts and relations
    c) Blood supply (1+6+3)

Short Answer Questions **3x5-15**

11) Spermatogenesis
12) Histology of Cardiac muscle
13) Types of Epiphysis with example

Very Short Questions **5x2=10**

14) Name the branches of External carotid artery

15) Wry neck or torticollis
16) Name the midline structures in the neck
17) Name the subdivisions of Pharynx and give the clinical importance of pyriform fossa
18) Name any four structures present on Hyoglossus muscle

Recommended books

1. SNELL (Richard S.) Clinical Anatomy for Medical Students, Ed. 5, Llittle Brown & company, Boston.
2. RJ LAST'S Anatomy – McMinn, 9th edition.
3. ROMANES(G.J.) Cunningham Manual of Practical Anatomy : Head & Neck & Brain Ed.15.Vol.III, Oxford Medical publication.
4. WHEATER,BURKITT& DANIELS, Functional Histology, Ed. 2, Churchill Livingstone.
5. SADLER , LANGMAN'S, Medical Embryology, Ed. 6.
6. JAMES E ANDERSON, Grant's Atlas of Anatomy. Williams & Wilkins.
7. WILLIAMS, Gray's Anatomy, Ed.38. ,Churchill Livingstone.
8. EMERY,Medical Genetics.

GENERAL PHYSIOLOGY

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 120	**Total : 60**	**180**

GOAL

The broad goal of the teaching undergraduate students in Physiology aims at providing the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease.

OBJECTIVES

KNOWLEDGE

- Explain the normal functioning of all the organ systems and their interactions for well
- Co-ordinated total body function.
- Assess the relative contribution of each organ system towards the maintenance of the milieu interior.
- List the physiological principles underlying the pathogenesis and treatment of disease.

SKILLS

- At the end of the course, the student shall be able to :
- Conduct experiments designed for the study of physiological phenomena.
- Interpreted experimental and investigative data
- Distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

SYLLABUS I YEAR
Theory – 120 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
GENERAL PHYSIOLOGY				
1	Structure and function of a cell	5%	1	M
2.	Homeostasis		1	M
3.	Transport across cell membrane		2	D
4.	Membrane potential		1	N
5.	Body fluid compartments		1	M
BLOOD				
1.	Composition and functions of blood	12%	1	M
2.	Plasma proteins		1	M
3.	Erythrocytes		2	M
4.	PCV & ESR		1	M
5.	Hemoglobin		0.5	M
6.	Blood indices		0.5	M
7.	Anemia		0.5	M
8.	Leukocytes		3	M
9.	Development of wbc		0.5	N
10.	Thrombocytes		0.5	M
11.	Development of platelets		0.5	N
12.	Haemostasis		1	M
13.	Blood groups		1	M
14.	Blood volumes		0.5	D
15.	Tissue fluids & lymph/ Oedema		0.5	M
16.	Functions of reticulo endothelial system		0.5	D
NERVE MUSCLE PHYSIOLOGY				
1.	Classification of nerve fibres	5%	1	M
2.	Structure of skeletal muscle		1	M
3.	Molecular mechanism of muscle contraction		1	M

4.	Neuromuscular junction & itstransmission		1	D
5.	Properties of skeletal muscle		0.5	D
6.	Properties of cardiac & smooth muscle		1	D
7.	Myasthenia gravis & rigor mortis		0.5	D
DIGESTIVE SYSTEM				
1.	General structure & innervation	6.6%	1	M
2.	Salivary gland		1	M
3.	Stomach		1	M
4.	Composition of gastric juice		1	M
5.	Mechanism & regulation of gastric secretion		1	M
6.	Exocrine pancreas		1	N
7.	Liver		0.5	D
8.	Gall bladder		0.5	D
9.	Small intestine		1	M
10	Large Intestine		0.5	D
11	Motor functions of GIT		0.5	M
ENDOCRINOLOGY				
1.	GENERAL ENDOCRINOLOGY	7%		
	Second messengers		0.5	D
	Anterior pituitary		1	M
	Hormones & actions			M
	Regulation			M
	Disorders			M
2.	Posterior pituitary		1	M
	Functions & regulations			M
	Disorders Diabetes insipidus			D
3.	Thyroid gland		1	M
	Histology, synthesis& regulations			N
	Actions & functions			M
	Disorders			M
4.	Adrenal cortex		1	M
	Classification of hormones			M
	Actions & functions			M
	Regulation of secretion of cortisol & aldosterone			M
	Disorders-cushing’s syndrome			M

5.	Adrenal medulla		1	M
	Actions of adrenaline & nor adrenaline			M
6.	Regulation of secretion			M
	Endocrine pancreas		2	M
	Hormones & actions			M
	Regulation of secretion			M
	Regulation of blood glucose level			M
	Diabetes mellitus			M
7.	Parathyroid		1	M
	Hormones,secretions& actions			M
	Regulation of blood calcium level-calcitriol			M
	Disorders-tetany			M
REPRODUCTIVE				
1.	Sex determination	5%	1	D
2.	Male reproductive system: functions of testes, puberty		0.5	M
3.	Spermatogenesis, actions of testosterone		0.5	M
4.	Female reproductive system:' structure of ovary & uterus,		1	M
5.	Stages of menstrual cycle		1	M
6.	Actions of estrogen and progesterone		0.5	M
7.	Functions of placenta		0.5	M
8.	Physiological changes during pregnancy		0.5	M
9.	Lactation , milk ejection reflex		0.5	M
CARDIOVASCULAR SYSTEM				
1.	Physiological anatomy of heart	9%	0.5	M
2.	Origin and spread of cardiac impulse		0.5	M
3.	Structure and properties of cardiac muscle		1	M
4.	Cardiac cycle: definition, events.		1	M
	Pressure & volume changes in atria and ventricles ; jvp, arterial pulse			D
5.	Heart sounds :causes, characteristics and significance		0.5	M
6.	Normal ECG,causes of waves		1	M

7.	Dynamics of blood flow: flow – pressure – resistance relationships; law of laplace		1	D
8.	heart rate : normal value, factors affecting hr and its control		0.5	M
9.	Cardiac output: definitions, normal values, physiological variations, determination, (principles underlying the methods only), its regulation		1	M
10.	Arterial blood pressure: definitions, normal values, physiological variations, factors maintaining blood pressure, determinants, regulation and measurement, bain bridge reflex, hypertension.		2	M
11.	Shock: physiological basis of signs and symptoms		0.5	M
12.	Cardio-vascular changes during exercise		0.5	M
13.	Coronary circulation		1	M
RESPIRATORY SYSTEM				
1.	Physiological anatomy of respiration	6.6%	0.5	M
2.	Non respiratory functions of respiratory system		0.5	M
3.	Mechanics of respiration: mechanism of breathing; pressure changes during ventilation; alveolar ventilation: Dead space, v/p ratio,diffusion capacity of lungs		1	M
4.	Lung volumes and capacities ; definition, normal values, significance, factors affecting vital capacity, variations in vital capacity, fevand its variations.		1	M
5.	Pressure volume relationship(compliance); work done during breathing: airway resistance;		1	N
6.	Alveolar surface tension (surfactant, hyaline membrane disease);		1	M
7.	Oxygen transport : oxygen –hemoglobin dissociation curve; Carbon di oxide transport		1	M
8.	Regulation of respiration: neural regulation : centers – dorsal group of respirator neurons(drg), ventral group of respiratory neurons(vrg),hering-breuer reflex		0.5	M
9.	Chemical regulation: peripheral and central chemoreceptors, ventilator response to oxygen lack, carbondioxide and h ions, effect of voluntary hyper ventilation.		0.5	M
10.	Hypoxia: types and effects,		0.5	M

11.	Acclimatization to high altitude, cyanosis, asphyxia, artificial respiration		0.5	D
RENAL SYSTEM				
1.	Functions of kidneys. Nephron: structure, types ; cortical &juxtamedullary	5.8%	0.5	M
2.	Juxtaglomerular apparatus; structure & functions		0.5	M
3.	Mechanism of urine formation; ultrafiltration, gfr-definition, factors affecting,		1	M
4.	Selective reabsorption-sodium, urea,water,glucose		0.5	D
5.	Tubular secretion		0.5	D
6.	Water excretion		0.5	M
7.	Tmg, renal threshold for glucose,tubular load for glucose		0.5	N
8.	Mechanism of concentration and acidification of urine		1	
9.	Concept of clearance-inulin, pah& urea clearance		0.5	D
10.	Innervation of bladder : micturition reflex, Diuresis & Cystometrogram		0.5	M
11.	Regulation of body temperature		1	M
CENTRAL NERVOUS SYSTEM				
1.	Synapse : types, properties	11.6%	1	M
2.	Sensory receptors : definition, classification, general properties		1	M
3.	Reflex arc : definition, classification, general properties		1	M
	Flexion reflex, stretch reflex, reverse stretch reflex			D
4.	Pathways for fine touch, pressure, proprioception, crude touch, thermal and pain sensations,		1	M
5.	Physiology of pain : referred pain		1	M
	Spino-cerebellar : pathway and functions			M
6.	Pyramidal tracts: origin, course, termination and functions		1	M
7.	Signs of upper & lower motor neuron lesions		0.5	M
8.	Functions of cerebellum, basal ganglia, thalamus, hypothalamus.		0.5	M

9.	Connections of cerebellum, basal ganglia, thalamus, hypothalamus.		0.5	D
10.	Signs of cerebellar disorders and parkinson's disease		0.5	D
11.	Functions of vestibular apparatus- reticular formation		0.5	D
12.	Eeg- sleep, wakefulness		1	M
13.	Functions of limbic system		0.5	M
14.	Higher functions: memory, learning & motivation		1	M
15.	Cerebral cortex : areas & functions		1	M
16.	Autonomic nervous system : organization & functions		1	M
17.	Cerebrospinal fluid : formation, circulation, composition and function, lumbar puncture		1	M
SPECIAL SENSES				
1.	Vision : functional anatomy of eyeball	4%	0.5	M
2.	Functions of iris, aqueous humor			D
3.	Layers of retina; rods & cones		0.5	M
4.	Accommodation to near vision			M
5.	Visual pathways		0.5	M
6.	Effects of lesions of visual pathway		0.5	N
7.	Field of vision, colour vision, colour blindness			N
8.	Refractive errors: myopia, hypermetropia, presbyopia & astigmatism. Visual acuity, pupillary reflexes			M
9.	Audition : anatomy & functions of outer, middle and inner ear, organ of corti, mechanism of hearing		1	M
10.	Auditory pathways		1	M
11.	Deafness- types & tests of hearing			D
12.	Taste : taste buds, primary taste sensation, pathway for taste sensation		0.5	M
13.	Smell : receptors , olfactory pathways		0.5	M

Practicals: no: of hours = 60

SL NO	Practicals	Observe/ assist/ perform
1	Microscopy	perform
2	Hemocytometry	perform
3	Determination of RBC count	Perform
4	Determination of WBC count	Perform
5	Determination of hemoglobin concentration	Perform
6	Differential leucocyte count	Perform
7	Determination of blood group	Perform
8	Determination of bleeding time & clotting time	Perform
9	Examination of radial pulse	Perform
10	Determination of pulse & BP	perform
11	Examination of CVS	Observe
12	Examination of RS	Observe
13	Examination of CNS	Observe

Scheme of examination

1. Theory Exams: 70 marks

   Section A: 35 marks
   Section B: 35 marks

   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Practical Examination: 90 marks

   Major experiment: 45 marks
   Minor experiment: 45 marks

   Practical Internal Assessment: 10 marks
   Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A : (General physiology, Blood, Nerve-muscle, Excretion, Cardiovascular system and Respiratory system) (35 marks)

Section B : (Gastro intestinal tract, Endocrinology, Reproduction, Central nervous system, Special senses and Integrative physiology) (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

Section – A

1. General physiology
2. Blood
3. Nerve-muscle
4. Excretion
5. Cardiovascular system
6. Respiratory system

Section – B

1. Gastro intestinal tract
2. Endocrinology
3. Reproduction
4. Central nervous system
5. Special senses
6. Integrative physiology

Blue print of question paper

MATRIX-I

Section -A

Chapters	LAQ	SAQ	VSAQ
General physiology			1
Blood		1	
Nerve-muscle			2
Excretion		1	
Cardiovascular system	1		
Respiratory system		1	2

Section - B

Chapters	LAQ	SAQ	VSAQ
Gastrointestinal		1	
Endocrinology		1	2
Reproduction		1	
Central nervous system	1		
Special senses			3

MATRIX-II

Section -A

Chapters	LAQ	SAQ	VSAQ
General physiology			1
Blood		1	
Nerve-muscle			2
Excretion		1	
Cardiovascular system		1	2
Respiratory system	1		

Section - B

Chapters	LAQ	SAQ	VSAQ
Gastrointestinal system		1	
Endocrinology	1		
Reproduction			2
Central nervous system		1	3
Special senses		1	

(UNIVERSITY MODEL QUESTION PAPER)

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

MATRIX-I
SECTION-A (35 marks)

LAQ **(1×10=10)**

1) Define blood pressure. Give the normal values. Briefly explain baroreceptor regulation of blood pressure **(2+2+6=10**

SAQ **(3×5=15)**

1) Briefly describe phagocytosis
2) Define GFR. Give the normal values. List the factors regulating it **(2+1+2=5)**
3) Draw a schematic diagram of oxygen dissociation curve. List the factors which causes right shift of the curve **(3+2=5)**

VSAQ **(2×5=10)**

1) Briefly describe intercellular communications
2) Draw a schematic diagram of neuromuscular junctions
3) List four properties of nerve fibers
4) Define compliance
5) Briefly describe what is hypoxic hypoxia

SECTION-B (35 marks)

LAQ **(1×10=10)**

1) Name the ascending tracts. Trace pain pathway. Add a note on referred pain **(4+4+2=10**

SAQ **(3×5=15)**

1) Briefly describe different phases of deglutition
2) Name female contraceptive methods
3) List the differences between thyroid and pituitary dwarf

VSAQ **(2×5=10)**

1) Functions of middle ear
2) Trace taste pathway
3) Name the hormones involved in calcium homeostasis
4) Name four refractive errors
5) List four clinical features of Cushing's syndrome

MATRIX-II
SECTION-A (35 marks)

LAQ **(1×10=10)**

1) Briefly describe neural and chemical regulation of respiration **(5+5=10)**

SAQ **(3×5=15)**

1) State Landsteiner's law. Add a note on erythroblastosisfetalis **(2+3=5)**
2) Briefly describe the renal handling of sodium.
3) Define cardiac output. List the factors regulating it **(2+3=5)**

VSAQ **(2×5=10)**

1) Define facilitated diffusion with one example
2) Name the muscle protein involved in excitation contraction coupling
3) Define shock
4) Draw a neat labeled diagram of lead-II ECG
5) Define refractory period

SECTION-B (35 marks)

LAQ **(1×10=10)**

1) Name the hormones secreted by pancreas. Briefly describe the actions of insulin. Add a note on diabetes mellitus **(4+4+2=10)**

SAQ **(3×5=15)**

1) List the properties of synapse
2) Trace visual pathway
3) Describe the mechanism of HCl secretion

VSAQ **(2×5=10)**

1) Name the stages of spermatogenesis
2) Draw a labeled diagram of reflex arc
3) List four functions of estrogen
4) Name the centers involved in thirst and food intake
5) Mention two differences between REM and NREM sleep

Recommended Books

1. Human physiology for BDS- Prof. A K Jain
2. Fundamentals of physiology- Bijlani
3. Manual of practical physiology- Prof. A K Jain

Biochemistry, Nutrition and Dietetics

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 70	**Total : 60**	**130**

GOAL

The major aim is to provide a sound but crisp knowledge on the biochemical basis of the life processes relevant to the human system and to dental/medical practice. The contents should be organised to build on the already existing information available to the students in the pre- university stage and reorienting. A mere rehash should be avoided.

OBJECTIVES

KNOWLEDGE

The chemistry portion should strive towards providing information on the functional groups, hydrophobic and hydrophilic moieties and weak valence forces that organise macromolecules. Details on structure need not be emphasised.

SKILLS

Discussion on metabolic processes should put emphasis on the overall change, interdependence and molecular turnover. While details of the steps may be given, the student should not be expected to memorise them. An introduction to biochemical genetics and molecular biology is a must but details should be avoided. The exposure to antivitamins, antimetabolites and enzyme inhibitors at this stage, will provide a basis for the future studyofmedicalsubjects. An overviewofmetabolicregulationistobetaughtbycoveringhormonalaction, second messengers and regulation of enzyme activities. Medical aspects of biochemistry should avoid describing innumerable functional tests, most of which are not in vogue. Cataloguing genetic disorders under each head of metabolism is unnecessary. A few examples which correlate genotype change to functional changes should be adequate.

SYLLABUS I YEAR
Theory – 70 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
	Introduction to Biochemistry and its Scope in Dentistry	1.4%	1	D
	Chemistry of biomolecules & their significance Carbohydrates • Definition • Classification • Isomerism of sugars • Physiologically important mono, di and polysaccharides • Glycogen, starch, cellulose • Mucopolysaccharides – Hyaluronic acid, Chondroitin sulphate, Heparin	2.9%	2	M
	Physiologically significant Lipids • Definition & classification	4.3%	3	M
	• Essential Fatty acids, eicosonoids & their functions			M
	• Neutral fats and their significance			D
	• Phospholipids & their functions			M
	• Cholesterol and compounds derived from it.			M
	• Lipoproteins structure, classification & their separation			M
	a) *Micelle*			D
	b) Liposomes, preparation, types & their applications			M
	<u>Proteins, amino acids immunoglobulins & haemoglobin Amino Acids and Proteins:</u> • Amino Acids – Classification based on structure and their nutritional importance • Physiologically active peptides • Proteins – Definition, functions, classification, structural organization • Plasma Proteins and their separation by electrophoresis <u>Immunoglobulins : Structure, types & functions</u> Special features and organization of proteins, collagen; structure and composition, Muscle	7.1%	5	M

	proteins – Actin, Myosin& disorders associated with their structure & functions Haemoglobin and its abnormal forms			
	Enzymology • Definition, classification& properties of enzymes	7.1%	5	M
	• Co enzymes and cofactors			M
	• Holo enzyme concept			M
	• Enzyme specificity			D
	• Mechanism of action of enzymes			M
	• Iso enzyme			M
	• Factors influencing enzyme activity			M
	• Enzyme inhibition – types and			M
	• Examples			M
	Biological Oxidation • Electron Transport Chain (ETC)	1.4%	1	M
	• Oxidative Phosphorylation			M
	• Uncouplers			M
	• *Significance of brown adipose tissue*			D
	• Inhibitor of ETC			M
	Metabolism of carbohydrates with inborn errors of metabolism • Digestion and absorption of Carbohydrate	8.6%	6	M
	• Glycolysis& gluconeogenesis			M
	• Citric Acid cycle			M
	• Metabolism of glycogen & glycogen storage diseases			M
	• HMP shunt and its significance			M
	• *Rapaport Leubering cycle*			D
	• *Uronic acid pathway & its significance*			D
	• Glucose-alanine cycle & lactic acid cycle			M
	• Metabolism of fructose & galactose with inborn errors			M

	• Regulation of Blood Glucose & Diabetes Mellitus			M
	Metabolism of lipids with inborn errors • Digestion and absorption of lipids	7.1%	5	D
	• Different types of oxidation of FAs & their significance			D
	• Beta oxidation of fatty acids and its energetic			M
	• Ketone body formation, utilization Ketoacidosis			M
	• *De novo Fatty acid biosynthesis*			D
	• *Synthesis of cholesterol*			D
	• Compounds derived from cholesterol			M
	• Regulation of FA & cholesterol biosynthesis			M
	• Metabolism of Lipoproteins (Chylomicrons VLDL, LDL & HDL)			M
	• Lipid profile, dyslipidemia & atherosclerosis			M
	• Frederickson's classification of hyperlipoproteinemias			M
	• *Metabolism of adipose tissue*			D
	• Fatty liver & lipotropic factors			M
	Metabolism of Amino acids with Inborn errors • Digestion and absorption of Amino acids	8.6%	6	D
	• Deamination of Amino acids, Transamination, Decarboxylation			D
	• Production and fate of ammonia, Urea cycle pathway& hyper ammonemias			M
	• Metabolism of glycine & compounds derived fromit.			M
	• Metabolism of hydroxy amino acids			D
	• Metabolism of sulphur containing			M
	• amino acids, homocysteinurias, cystinuria & cystinosis, Metabolism of polyamines, nitric oxide & their			M
	• functions			M
	• Metabolism of tryptophan &			M
	• compounds derived from it.			M
	• Metabolism of phenylalanine & tyrosine, compounds derived from it., Phenylketonuria, tyrosinemias, albinism & Alkaptonuria			M

	• Metabolism of branched chain amino acids & MSUD			M
	• Metabolism & metabolic significance of glutamic acid, aspartic acid, glutamine, asparagines, proline, histidine & hydroxyl proline			D
	• Aminoacidurias: clinical features, diagnosis & management			M
	• Biologically important amines			M
	Heme metabolism • Heme Biosynthesis	1.4%	1	D
	• Regulation of heme biosynthesis			M
	• Degradation of Heme			D
	• Porphyrias: types biochemical defect, clinical features & biochemical basis of their management			M
	Vitamins: • Definitions and classification of micro & macronutrients	8.6%	6	M
	• A brief account of Sources, RDA, functions, deficiency manifestations, vitamin antagonists & assessment of vitamin status			M
	• Chemistry of vitamins			D
	<u>Minerals metabolism</u> Distribution, sources, functions, requirements, absorption, metabolism, regulation & deficiency manifestation	4.3%	3	M
	• Calcium, Iron, Iodine, Fluoride, Copper, Zinc, Magnesium,	2.9%		M
	• Selenium, Manganese			D
	Nutrition, dietics and energy metabolism • Principles of calorimetry, Respiratory quotient, Specific Dynamic action of foods, Nitrogen balance, milk composition and functions, determination and Basal Metabolic Rate (BMR)		2	M
	• Dietary factors, Nutritional indices of biomolecules, glycemic index,			M

	• Balanced diet			M
	• Dietary fibres& their significance			M
	• Protein – calorie malnutrition (Kwashiorkor and marasmus)			M
	• Obesity			M
	• Diet charts for patients with diabetes Mellitus, renal failure & hypertension			D
	Acid–Base Balance • Acid, Base and Buffers	7%	2	D
	• Mechanism of Acid Base Balance			M
	• Acid Base Disorders			M
	Water & electrolyte balance • Intake & output of water, osmolality of ECF		1	M
	• Sodium , Potassium			M
	• chloride			D
	Organ function Test • Hepato-biliary function test		4	M
	• Renal function test			M
	• Thyroid function tests			M
	• Gastric, pancreatic & adrenal function tests			D
	Nucleic Acids : Chemistry & metabolism • *Structure & functions of Purines & pyrimidines*	5.7%	4	D
	• Structure & Types of Deoxyribonucleic acid (DNA) & Ribonucleic Acid (RNA)			M
	• Synthetic purine & pyrimidine bases & their applications.			M
	• Metabolism of purines & pyrimidines			M
	• with inborn errors of metabolism			M
	Molecular Biology • Structural organization of DNA	11.4%	8	M
	• Replication of DNA			M
	• Mutations & DNA repair mechanisms			M
	• Transcription			M
	• Genetic code & their properties			M

	• Translation			M
	• Regulation of Gene expression			D
	• Recombinant DNA technology			M
	• CDNA library,			D
	• PCR: types & applications			M
	• Biochemistry of cancer : tumor suppressor genes, oncogenes, oncogenic viruses			D
	• tumor markers			M
	<u>Clinical Enzymology</u> Enzymes of diagnostic & therapeutic significance	8.6%	1	D
	Free radicals and antioxidants		1	M
	Metabolic diseases with dental abnormalities		1	M
	Other body fluids Milk, Saliva, CSF		1	M
	Detoxification		1	M
	Classification& mechanism of action of hormones		1	M
	Clinical chemistry • Reference values, pre-analytical variables	2.9%	2	M
	• specimen collection & processing.			D
	• POCT			M
	• quality control			D

Practicals: no: of hours = 60 hours

SL NO	Practicals	Observe/ assist/ perform
1	• Qualitative analysis of carbohydrates & proteins	P
2	• Color reactions of amino acids	P
3	• Urine analysis (normal, abnormal)	P
4	• Analysis of saliva	O
5	• Electrophoresis	O
6	• Chromatography	O
7	• Extraction of DNA & PCR	O
8	• Estimation of blood glucose, creatinine, urea & cholesterol	O
9	• ABG analyzer,	O
10	• Electrolytes – ISE method	O
11	• Analysis of Milk	O

Scheme of examination

1. Theory Exams: 70 marks

   Section A: 35 marks
   Section B: 35 marks

   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Practical Examination:

   OSPE: 80 marks
   Practical Internal Assessment: 10 marks
   Practical Record: 10 marks
   Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: 35 marks

1. Cell, sub cellular organelles, bio- membranes and Membrane Transport system (5)
2. Chemistry of Biomolecules & Enzymology (6)
3. Biological oxidation(2)
4. Carbohydrate metabolism (10)
5. Lipid metabolism (10)
6. Heme metabolism (2)

Section B: 35 marks

1. Vitamin, Mineral and Nutrition (10)
2. Amino Acid Metabolism (7)
3. Nucleotide chemistry & Metabolism (4)
4. Molecular biology, cell biology and Cancer Biology (9)
5. Organ function Test & acid – base Balance (5)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

(UNIVERSITY MODEL QUESTION PAPER 1)
Biochemistry, Nutrition and Dietetics

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

SECTION – A

Long Answer Questions **1X10 = 10 marks**

1. Explain the reactions of citric acid cycle with suitable illustration. Mention about the energetic involved in TCA cycle. List any two inhibitors of TCA cycle with their mechanism. [5+3+2 = 10]

Short Answer Questions **3X5 = 15 marks**

2. Explain structure of collagen composition of collagen with suitable illustration.
3. What do you mean by Irreversible inhibition of enzyme activity? Give any two examples.
4. Explain the process of "Reverse cholesterol transport" with suitable biochemical reactions and illustrations

Very Short Question **5X2 =10 marks**

5. Mention any four differences between Eukaryotic and prokaryotic cell.
6. Explain the role of cholesterol in regulating the membrane fluidity
7. Give two examples of substrate level phosphorylation with suitable reactions
8. List any 2 synthetic bases and mention any one biological function of them.
9. Explain the biochemical basis of giving Hematin or Glucose infusion to treat acute attack of Porphyria?

Section B

Long Answer Questions **1X10=10 marks**

10. Describe Vitamin D under the following headings , sources, RDA, absorption, synthesis and functions of vitamin D. Write the deficiency manifestations of vitamin D. [1+1+3+3+2]

Short Answer Questions **3X5 = 15 marks**

11. List any four function of serotonin
12. Explain suitable illustrations how the transfer RNA is charged with amino acids
13. Explain how will you differentiate the types of jaundice by using various biochemical tests

Very Short Question **5X2 =10 marks**

14. Define BMR and mention any Two factors affecting BMR
15. List any two synthetic analogues of purine bases and mention its clinical application
16. Draw the general structure of Immunoglobins.
17. Mention Four causes of hyponatremia
18. Define Anion gap. Mention its reference range in a healthy adult

(UNIVERSITY MODEL QUESTION PAPER 2)

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

SECTION – A

Long Answer Questions **1X10 = 10 marks**

1. a) Explain how fatty acids are activated and transported into mitochondria with suitable illustrations.

   b) List the steps involved in the conversion of fatty acids to acetyl COA with suitable enzymes and coenzymes (3+7=10 marks).

Short Answer Questions **3X5 = 15 marks**

2. Define glycosuria. Mention any two causes of glycosuria and mention any one biochemical test for diagnosis of glycosuria
3. Mention any five differences between the competitive and non - competitive types of enzymes inhibition.
4. List and mention functions of any FOUR biologically important peptides

Very Short Question **5X2 =10 marks**

5. What are "ionophores"? Give ANY TWO examples. Mention their application in clinical chemistry.
6. Define active transport? Give ONE examples?
7. List any four hemoglobin derivatives
8. Define uncoulpers and mention two suitable examples for uncouplers.
9. Mention four significance of HMP Shuntpathway

Section B

Long Answer Questions **1X10 = 10 marks**

10. Explain the process of formation, transport and detoxification of ammonia with suitable illustration and reactions.

Short Answer Questions **3X5 = 15 marks**

11. Describe vitamin K under the following headings sources, RDA, absorption & functions of Vitamin K
12. List any Four Inhibitors of transcription with their mechanism of inhibition.
13. Define "Clearance". Mention any two exogenous and two endogenous markers to estimate GFR

Very Short Question : **5X2 =10 marks**

14. What is the Biochemical defect in Wilsons diseases
15. Mention the co-enzyme form of folic acid and Vitamin B12
16. List any FOUR causes for metabolic acidosis
17. Name the different types of IMMUNOGLOBULINS

18. What is gout? List any 2 causes for gout with suitable biochemical basis.

Recommended books

1. Concise text book of Biochemistry (3rd edition) 2001, T.N. Pattabiraman
2. Nutritional Biochemistry 1995, S. Ramakrishnan and S.V. Rao
3. Lecture notes in Biochemistry 1984, J.K. Kandlish
4. Text book of Biochemistry with clinical correlations 1997, T.N. Devlin
5. Harper's Biochemistry, 1996., R.K. Murray et.al
6. Basic and applied Dental Biochemistry, 1979, R.A.D. Williams & J.C.Elliot

Dental Anatomy, Embryology and Oral Histology

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 105	**Total : 250**	**355**

GOAL

Goal is to incorporate knowledge about basic Dental Sciences - Dental Anatomy, Embryology & oral Histology and their clinical applications.

OBJECTIVES

KNOWLEDGE

After a course on Dental Anatomy, Embryology and Oral Histology,

1. The student is expected to appreciate the normal development, morphology, structure & functions of oral tissues & variations in different pathological/non-pathological states.
2. The student should understand the histological basis of various dental treatment procedures and physiologic ageing process in the dental tissues.
3. The students must know the basic knowledge of various research methodologies.

SKILL

The student should acquire basic skills in:

- Carving of crowns of permanent teeth in wax.
- Microscopic study of Oral tissues.
- Identification of Deciduous & Permanent teeth.
- Age estimation by patterns of teeth eruption from plaster casts of different age groups.

SYLLABUS I YEAR

Theory – 105 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	Introduction to tooth morphology	3.2%	5	M
2.	Morphology of all permanent teeth	12.7%	20	M
3.	Morphology of all Deciduous teeth	3.2%	5	M
4.	Occlusion	3.2%	5	M
5.	Development and growth of face and jaws.	2.5%	4	D

6.	Development of tooth	3.8%	6	M
7.	Cranial nerves with more emphasis on V.VII and IX.	1.3%	2	M
8.	Blood supply, nerve supply and lymphatic drainage of teeth and surrounding structures.	1.3%	2	M
9.	Cell – structure and function	1.9%	3	N
10.	Maxillary sinus	1.3%	2	M
11.	Detailed microscopic study of Enamel	5.1%	7	M
12.	Detailed microscopic study of Dentin	3.8%	6	M
13.	Detailed microscopic study of Cementum	1.3%	2	M
14.	Detailed microscopic study of Pulp tissue	2.5%	4	D
15.	Detailed microscopic study of Periodontal ligament	2.5%	4	D
16.	Detailed microscopic study of Alveolar bone	1.9%	3	N
17.	Detailed microscopic study of Oral Mucosa	5.1%	6	M
18.	Salivary Glands	2.5%	4	M
19.	Lymphoid tissues and lymphatics	1.3%	2	N
20.	Histochemistry of oral tissues	1.3%	2	D
21.	Preparation of specimens for Histologic study	0.6%	1	N
22.	Eruption of deciduous & Permanent teeth	1.3%	2	M
23.	Shedding of teeth	0.6%	1	N
24.	Temperomandibular joint	1.3%	2	N
25.	Calcium, Fluoride, Phosphorous metabolism	1.3%	2	M
26.	Mastication and deglutition	0.6%	1	M
27.	Theories of mineralization	0.6%	1	D
28.	Speech	0.6%	1	N

PRACTICAL : 250 Hours
Dental Anatomy : 150 hrs

Carving on wax blocks:(120 hrs)

- Cube, rectangle, cone and cylinder (any one)
- Individual tooth - Only permanent teeth of both arches. Central Incisors, Lateral, Canines, Premolars and 1st molar.

Record : (30 hrs)

- Drawings of individual deciduous teeth
- Drawings of individual Permanent teeth
- Chronology of deciduous and permanent teeth
- Draw the primary dentition
- Draw the mixed dentition
- Draw the permanent dentition

Oral Histology: 80 hrs

S.No	CONTENT	DURATION
1.	**Development of tooth :** 1. Bud stage 2. Cap stage 3. Early bell stage 4. Late Bell stage 5. Hertwig's epithelial root sheath	12 hrs
2.	**ENAMEL :** 1. Enamel rod. 2. Hunter-Schreger Bands 3. Tufts, Lamellae, Spindles. 4. Incremental lines of Retzius. 5. Gnarled Enamel.	12 hrs
3.	**DENTIN :** 1. Dentino - Enamel junction. 2. Dentinal Tubules. 3. Incremental lines of Von Ebner. 4. Tomes granular layer. 5. Interglobular Dentin. 6. Secondary Dentin. 7. Intratubular Dentin. 8. Intertubular Dentin. 9. Dead Tracts 10. Tertiary Dentin 11. Sclerotic Dentin	14 hrs
4.	**CEMENTUM:** 1. Cellular cementum. 2. Acellular cementum. 3.Cemento enamel junction - Type 1 - 60% type - Overlapping. - Type 2 - 30% type - Butt - Type 3 - 10% type - GAP type 4. Sharpey's fibers. 5. Hypercementosis.	8 hrs
5.	**PULP:** 1. Zones of Pulp 2. Pulp stones	5 hrs
6.	**PERIODONTAL PRINCIPAL LIGAMENT:** 1. Principal fibers of Periodontal ligament - Apical, Horizontal, Oblique, Alveolar crest, Interradicular, Transeptal	5 hrs

7.	**ALVEOLAR BONE:** 1. Haversian system. 2. Trabeculated bone. 3. Mature and immature bone.	4 hrs
8.	**SALIVARY GLANDS:** 1. Mucous gland 2. Serous gland. 3. Mixed gland.	6 hrs
9.	**MAXILLARY SINUS:** Sinus lining (Pseudostratified ciliated columnar)	2 hrs
10.	**ORAL MUCOUS MEMBRANE:** 1. Parakeratinised epithelium 2. Orthokeratinised epithelium 3. Non keratinized epithelium 4. Tongue - Circumvallate papillae - Fungiform papillae - Filiform papillae	12 hrs

PRACTICAL DEMONSTRATION: 20 hrs

1. Identification of Individual teeth.
   - Deciduous.
   - Permanent.

1. Mixed dentition using study models.

2. Demonstration of preparation of ground section, Decalcification, Paraffin section & H&E Staining.

Scheme of examination

1. Theory : 100 marks

Theory exam : 70 marks (Section A: 35 marks; Section B: 35 marks)
Internal assessment : 10 marks
Viva voce: 20 marks

2. Practicals : 100 marks
   Practical exam - 90marks
   Internal assessement-10 marks

Blue print of the question paper

The paper shall consist of two sections as follows:
Section A : Oral histology for 35 marks
Section B : Dental anatomy, Oral embryology, Oral Physiology and Oral Histology for 35 marks

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

Distribution of Topics and type of Questions in theory paper

Type of question and Marks	Content
Section A (35 marks) Essay- (1x10 marks)	Oral histology
Short Notes (3x5 marks)	Oral histology
Very short notes (5x2 marks)	Oral histology
SectionB (35 marks) Essay – (1x10 marks) Short Notes (3X5 marks) Very Short Answer (5x2 marks)	Dental anatomy/oral embryology Dental anatomy Oral embryology, oral physiology,oral histology Dental anatomy Oral embryology, oral physiology,oral histology

The questions will be distributed as follows:
70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY
SECTION A
Model 1:
IF LAQ IS FROM THE STRUCTURE OF TOOTH, THE MATRIX IS AS FOLLOWS

	SECTION A	LAQ(1X10)	SAQ(3X5)	VSAQ(5X2)	35 MARKS
1	Structures Of The Tooth	1	1		15
2	Oral Mucous Membrane		1	2	9
3.	Salivary Gland		1	1	7
4.	Temporo mandibular joint, Bone, Lymphoid Tissues & Lymphatics In Oro Facial Region And Maxillary Sinus			1	2
5.	Histochemistry And Preparation Of Specimens For Histologic Study			1	2

Model 2 : IF LAQ IS FROM THE ORAL MUCOUS MEMBRANE, THE MATRIX IS AS FOLLOWS

	SECTION A	LAQ(1X10)	SAQ(3X5)	VSAQ(5X2)	35 MARKS
1	Structures Of The Tooth		2	2	14
2	Oral Mucous Membrane	1			10
3.	Salivary Gland		1	1	7
4.	TMJ, Bone, Lymphoid Tissues & Lymphatics In Oro Facial Region And Maxillary Sinus			1	2
5.	Histochemistry And Preparation of Specimens For Histologic Study			1	2

SECTION – B

Model 1 : IF LAQ IS FROM THE DEVELOPMENT OF FACE, ORAL CAVITY AND TOOTH, THE MATRIX IS AS FOLLOWS

	SECTION A	LAQ(1X10)	SAQ(3X5)	VSAQ(5X2)	35 MARKS
1	Development Of Face, Oral Cavity And Tooth	1			10
2	Introduction To Dental Anatomy, Eruption & Shedding		1	1	7
3.	Primary Teeth, Forensic And Comparative Anatomy, Geometrics,Form And Functions			1	2
4.	Morphology of All Permanent Teeth and Pulp Canals And Chamber		1	1	7
5.	Oral Anatomy			2	4
6.	Occlusion and oral physiology		1		5

Model 2: IF LAQ IS FROM THE MORPHOLOGY OF ALL PERMANENT TEETH, THE MATRIX IS AS FOLLOWS

	SECTION A	LAQ(1X10)	SAQ(3X5)	VSAQ(5X2)	35 MARKS
1	Development Of Face, Oral Cavity And Tooth		2		10
2	Introduction To Dental Anatomy, Eruption & Shedding		1	1	7

3.	Primary Teeth, Forensic And Comparative Anatomy, Geometrics, Form And Functions			1	2
4.	Morphology of All Permanent Teeth and Pulp Canals And Chamber	1			10
5.	Oral Anatomy			1	2
6.	Occlusion and oral physiology			2	4

(UNIVERSITY MODEL QUESTION PAPER)
I BDS EXAMINATION

DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

SECTION – A

LONG ANSWER QUESTION **(1 X 10 = 10)**

1. Classify oral mucosa and discuss in detail on the keratinized epithelium of oral mucosa.
(Classification – 3, Histology of Keratinized epithelium – 4; Diagram – 2 & Function -1)

SHORT ANSWER QUESTIONS **(3 X 5 = 15)**

2. Difference between serous and mucous cells.
(Histological difference of serous and mucous cells – 3 ;Diagram – 1 & Functional difference – 1)
3. Write a note on Enamel tufts.
(Histology of enamel tuft – 3 & Diagram – 2)
4. Difference between cellular and acellular Cementum
(Histological difference – 3; Diagram – 1 & Site and functions – 1)

VERY SHORT ANSWER QUESTIONS **(5 X 2 = 10)**

5. What are Sharpey'sfibres?
6. Define denticles. An d list out the types? (denticles -1)Types -1)
7. What are Von Korff'sfibres?
(Where is it seen -1) & (What is it -1)
8. List out the functions of maxillary sinus.
9. Give a diagrammatic representation of lymph node.

SECTION - B

LONG ANSWER QUESTION **(1 X 10 = 10)**

1. Discuss on the Chronology & Morphology of the maxillary first molar.
   (Chronology – 3; Morphological description – 4; Diagram – 2 & Clinical Importance - 1)

SHORT ANSWER QUESTIONS **(3 X 5 = 15)**

2. How is the permanent and primary teeth designated by FDI system?
   (What is FDI system – 1; Permanent teeth – 2 & Primary teeth – 2)
3. What is the role of Hertwig's epithelial root sheath in root formation and its fate?
   (What is Hertwig's Epithelial root sheath – 1; Formation -1; Role in root formation – 1;Fate – 1 & Diagram -1)
4. List out the theories of tooth eruption and write a note on ligament traction theory.
   (Theories of tooth eruption – 2 & Ligament traction theory – 3)

VERY SHORT ANSWER QUESTIONS **(5 X 2 = 10)**

5. Write any two differences between permanent maxillary central and lateral incisors.
6. Give 2 common sequences of eruption of primary teeth.
7. What is dentinal island?
8. What is the type of joint in TMJ& Tooth?
   (TMJ -1) & (TOOTH -1)
9. Write the corresponding tooth in which the groove is present: Mesiolingual groove, Distal oblique groove, Mesial marginal developmental groove, Fifth cusp groove

Recommended books

Name of the Book & Title	Author	Edition
Orban's Oral Histology & Embryology	Orban's S.N Bhaskar	13th
Oral Histology, Development, Structure & Function	A.R. Tencate	8th
Dental Anatomy,Physiology & Occlusion	Wheeler's Major M. Ash	9th

REFERENCE BOOK

- Dental anatomy by Scoot & Simon
- Oral Development & Histology by James and Avery
- Applied physiology of the Mouth by Lavelle
- Dental anatomy – its relevance to Dentistry 5th Edition by Woelfel

II YEAR SYLLABUS

GENERAL PATHOLOGY

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 55	**Total : 55**	**110**

GOAL

Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry

OBJECTIVES

Enabling the student

1. To demonstrate and apply basic facts, concepts and theories in the field of Pathology.
2. To recognize and analyze pathological changes at macroscopically and microscopical levels and explain their observations in terms of disease processes.
3. To Integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology.
4. To demonstrate understanding of the capabilities and limitations of morphological Pathology in its contribution to medicine, dentistry and biological research.
5. To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes.

SYLLABUS - Theory – 55 hours

S.No	Topic	System weightage	Duration of the class	Must know (M)/ Desirable to know (D)/ Nice to know (N).
GENERAL PATHOLOGY 50%				
Introduction to pathology				
1.	Historical aspects; definition of terms; introduction to pathology, its applications and role in patient management		1	M
Cell injury				
1.	Cellular responses to stress & noxious stimuli, cellular adaptation of growth & differentiation (hyperplasia, hypertrophy, atrophy & metaplasia)		1	M
2.	Cell injury and cell death (cause &mechanism of reversible & irreversible injury) Morphology of cell injury (reversible &necrosis), examples of cell injury and necrosis (ischaemic, hypoxic, reperfusion and chemical injuries)		2	M

3.	Apoptosis and sub-cellular responses to injury		1	M
4.	Intracellular accumulation, calcification & cellular aging; (Lipid, protein, glycogen and pigment accumulation; pathologic calcification; ageing)		2	M
Cell response to injury				
1.	Overview of immune system Introduction to body's immune response (innate & adaptive immunity; cells and tissues of immune system; cytokines; structure & function of Human Leucocyte Antigen(HLA)		1	M
2.	Acute Inflammation General features of inflammation; history; stimuli for acute inflammation; Vascular events; cellular events leucocyte adhesion and transmigration		1	M
3.	Acute Inflammation Continuation of cellular events (chemotaxis, phagocytosis, defects of leucocyte function); termination of acute inflammatory response; outcome of acute inflammation; morphological patterns of acute inflammation;		1	M
4.	Acute Inflammation Chemical mediators (Vaso-active amines; plasma proteins; Arachidonic acid metabolites; Platelet Activating Factors[PAF]; cytokines; chemokines; leucotrienes; Nitric Oxide; free radical & neuropeptides		1	M
5.	Chronic Inflammation Chronic inflammation (cause, morphological features; cells of chronic inflammation; granuloma; systemic effects of inflammation.		2	N
6.	Repair Healing by primary intention, secondary intention, Complications of healing, Factors affecting healing		1	M
Haemodynamic disturbances				
1.	Oedema, hypotension, congestion, haemorrhage & haemostasis		1	M
2.	Thrombosis & embolism		1	M
3.	Infarction, Shock		1	M
Genetic disorders				
1.	Normal karyotype; cytogenetic disorders (autosomal & x- chromosomal disorders)		1	M

2.	Mutation; Mendelian disorders (Transmission pattern, biochemical & molecular basis of single gene disease; principles of multifactorial inheritance		1	M
3.	Genetic disorders affecting structural protein, receptor protein, enzymes and regulatory proteins; Single gene disease with non- classical inheritance (mitochondrial gene mutation, genomic imprinting, molecular diagnosis)		1	D
Disorders of Immunity				
1.	Disorders of immunity – Types of Hypersensitivity reactions		1	M
2.	Principles of Autoimmunity –brief outline of -SLE, Rheumatoid arthritis, systemic sclerosis, Sjogren's Mixed Connective Disease[MCD].		1	M
3.	Primary & secondary immunodeficiency		1	M
Neoplasia				
1.	Definition, nomenclature, biology of tumour growth, differences between benign & malignant tumours, Tumour spread & epidemiology		1	M
2.	Molecular basis of Neoplasia (essential alterations for malignant transformation, oncogenes suppressor genes)		2	D
3.	Evasion of apoptosis; defects in DNA repair, telomerase and angiogenesis; invasion & metastasis; dysregulation of genes)		2	M
4.	Carcinogenesis (carcinogenic agents, molecular basis of carcinogenesis)		2	M
Infectious disorders				
1.	Mycobacterial infections –tuberculosis		2	M
2.	Leprosy, syphilis, viral, Fungal & parasitic infections and others		1	M
Environmental disorders				
1.	Nutritional deficiencies-Vitamin deficiencies		1	M
Hematology14%				
1.	Development of haematopoietic cells, bone marrow, classification of anaemia		1	M

2.	Anaemia of blood loss, Nutritional anaemia's, Anaemia of chronic disease, aplasia, other forms of impaired production		2	M
3.	Haemolytic anaemia – classification, membrane defects, enzyme defects Acquired haemolytic anaemia, Haemoglobinopathies.		1	M
4.	Bleeding disorders-classification, disorders of platelets, coagulation disorders		1	M
5.	Non-neoplastic quantitative and qualitative disorders of leucocytes		1	M
6.	Leukaemia- classification , aetiology, acute leukemias, Chronic leukemias,		1	M
7.	Blood banking – Grouping, Cross matching & Screening of Donors		1	M
8.	Lymph node- Non-neoplastic/neoplastic diseases		1	D
Oral cavity and Salivary glands5%				
1.	Lichen planus. leukoplakia, tumours of oral cavity		1	M
2.	**Salivary gland** Sialadenitis, Tumors of salivary gland		2	M
Systemic Pathology 31%				
Skeletal system				
1.	Osteomyelitis, classification of bone tumors, ostesarcoma, giant cell tumor, Ewings sarcoma, fibrous dysplasia, Aneursymal bone cyst		2	M
Cardiovascular system				
1.	Atherosclerosis and Hypertension Aneurysms Ischaemic heart disease & myocardial infarction Rheumatic fever, Vasculitis, Congenital anomalies, Vascular tumours. Infective endocarditis; diseases of the pericardium Congenital heart disease, diseases of the myocardium		2	M
Kidney				
1.	Glomerulonephritis, Nephrotic, nephritic syndrome. Pyelonephritis		2	D
2.	Tumors of soft tissue		2	D

Hypertension				
1.	Definition, classification, pathophysiology, effects on various organs		Seminar 1	M
Diabetes				
1.	Definition, classification, Pathogenesis, effects on various organs		Seminar 1	M

Practicals : No of hours = 55

S.No	Practicals	Hours
1.	Departmental tour, introduction to department, central laboratory, blood bank	2 hrs
2.	Morphological types of necrosis, types of gangrene- Specimen- caseous necrosis-lymph node, gangrene foot, intestine Slides- caseous necrosis	2 hrs
3.	Morphology of fatty ,cloudy, hyaline change, Demonstration of different types of pigments, calcification Specimen- fatty liver Slide fatty liver	2 hrs
4.	Tutorials -Cell injury	2 hr
5.	Morphological aspects of inflammation Specimen- acute appendicitis	2 hrs
6.	Morphology of granuloma, granulomatous inflammation Slide- granuloma	2 hrs
7.	Slide granulation tissue	2 hrs
8.	Tutorial- Inflammation and repair	2 hr
9.	Morphology of Chronic passive venous congestion-lung, liver Edema. Specimen- CPVC-liver, lung[chronic passive Venous Congestion] Myocardial infarct	2 hr
10.	Tutorial -Hemodynamics	2 hr
11.	Morphological aspects of benign and malignant tumours Specimen-lipoma Melanoma, Squamous cell carcinoma. Slides- lipoma, hemangioma, squamous cell carcinoma, basal cell carcinoma	2 hrs
12.	Tutorial - Neoplasia	2 hr
13.	Morphological aspects of tuberculosis Specimen-TB lymph node, lung	2 hrs
14.	Tutorial - Tuberculosis	2 hr
15.	Leprosy, syphilis	2 hr

16.	Collection of blood, anticoagulants, Haemoglobin estimation	2hr
17.	TLC (Total leucocyte count)	2hr
18.	DLC(Differential leucocyte count)-Peripheral smear examination	2hr
19.	Tutorial - Anaemia	2 hr
20.	Tutorial - Leukaemia	2 hr
21.	Blood grouping	2 hrs
22.	Morphology of salivary gland tumors Gross- pleomorphic adenoma Slides- pleomorphic adenoma	2 hrs
23.	Morphology of bone tumors Specimen-osteosarcoma, Giant cell tumor Slides- osteosarcoma, giant cell tumor	2 hrs
24.	Urine examination-Physical, chemical examination and sediment	3 hrs
25.	Cardiovascular system	2 hr
26.	Soft tissue	2 hr
27.	kidney	2 hr

Blue Print

The paper shall consist of two sections as follows:

Section A : General Pathology for **35 marks**

Section B : Haematology, and systemic Pathology, (oral pathology, cardiovascular system, oral pathology, Salivary glands, soft tissue, bones Kidney, liver, diabetes mellitus,) for **35 marks**

Each paper shall contain the structure as follows:

One Long answer question (LAQ) for 10 marks (Should be structured)
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10) (Should test the recall generally)

The questions can be distributed as follows: please refer to Question bank and syllabus

70 % should be from the Must know areas
20 % should be from Desirable to know areas
10 % should be from Nice to know areas

Model 1
If LAQ is asked from Cell injury then the pattern is as follows

SECTION A [General Pathology]					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Tuberculosis/leprosy/syphilis			1	2
2.	Cell injury (Basic mechanisms of cell injury, retrogressive changes, necrosis, gangrene)	1		2	14
3.	Inflammation and repair		1		5
4.	Neoplasia		1		5
5.	HIV infection/ disorders of immunity			1	2
6.	Hemodynamic disturbances		1		5
7.	Genetic disorders			1	2

SECTION B [Haematology, and systemic pathology] If one LAQ is from haematology then the pattern is as follows					
8.	Haematology	1		1	12
9.	Oral cavity		1		5
10.	bones			1	2
11.	Salivary gland		1		5
12.	Cardiovascular system			1	2
13.	Soft tissue		1		5
14.	Kidney			1	2
15.	Diabetes Mellitus/Hypertension			1	2

Model 2

SECTION A [General pathology] If one LAQ is from Inflammation then the pattern is as follows					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1.	Tuberculosis/leprosy/syphilis			1	2
2.	Cell injury		1	2	9
3.	Neoplasia	1			10
4.	Inflammation and Repair		1		5
5.	Genetic disorders			1	2

6.	Hemodynamic disturbances		1		5
7.	HIV infection/disorders of immunity			1	2

SECTION B [Haematology and systemic pathology] If one LAQ is from Haematology then the pattern is as follows					
8.	Haematology	1		1	12
9.	Oral cavity		1		5
10.	bones			1	2
11.	Salivary gland		1		5
12.	Cardiovascular system			1	2
13.	Soft tissue		1		5
14.	Kidney			1	2
15.	Diabetes mellitus/hypertension			1	2

Model Question Paper-1
General Pathology

Time : 3hours **Total marks: 70**

Draw Suitable diagrams wherever necessary

Section A [General Pathology]

Long Answer Questions **1X10 = 10 marks**

1. Define Necrosis [2]Mention types of necrosis with examples [4]Explain morphology of any one type in Detail [4]

Short Answer Questions **3X5 = 15 marks**

2. Describe process of healing by primary intention
3. Enumerate differences between benign and Malignant tumors
4. Describe etiopathogenesis of thrombosis

Very Short Question **5X2 =10 marks**

5. Enumerate four differences between dry and wet gangrene
6. Mention any four causes of cell injury.
7. Enumerate four opportunistic infections in Acquired Immunodeficiency Syndrome
8. Describe primary complex of pulmonary tuberculosis
9. Explain Karyotype of Down's syndrome

Section B [Haematology and systemic pathology]

Long Answer Questions **1X10 = 10 marks**

10. Define anemia [1] Write down classification of anemia [6] Explain Peripheral smear and Bone marrow findings in Megaloblastic anaemia [3]

Short Answer Questions **3X5 = 15 marks**

11. Explain etiopathogenesis of squamous cell carcinoma in oral cavity
12. Describe morphology of pleomorphic adenoma of salivary gland
13. Desribe gross and microscopic appearance of Lipoma

Very Short Question **5X2 =10 marks**

14. Describe morphological appearance of osteogenic sarcoma
15. Define nephritic syndrome
16. Classify Diabetes Mellitus
17. Describe Aschoff's body
18. Explain etiopathogenesis of haemophilia

Model Question Paper - 2
General Pathology

Time: 3hours **Total marks: 70**

Draw Suitable diagrams wherever necessary

Section A [General Pathology]

Long Answer Questions **1X10 = 10 marks**

1. Define Neoplasia [2] Enumerate differences between benign and malignant tumors [4] Explain modalities of spread of tumors [4]

Short Answer Questions **3X5 = 15 marks**

2. Explain mechanism of phagocytosis
3. Describe etiopathogenesis of septic shock
4. Define gangrene and explain etiopathogenesis of gas gangrene

Very Short Question **5X2 =10 marks**

5. Enumerate four examples of autosomal recessive disorders
6. Enumerate four autoimmune disorders
7. Enumerate four examples of apoptosis
8. Define Acquired Immunodeficiency syndrome
9. Describe histology of lepromatous leprosy

Section B [Haematology and systemic pathology]

Long Answer Questions **1X10 = 10 marks**

10. Define Leukemias. Classify acute leukaemias according to FAB classification. Describe Peripheral blood smear and bone marrow findings in acute myeloid leukaemia. (2+4+4)

Short Answer Questions **3X5 = 15 marks**

11. Describe microscopic appearance of Ameloblastoma
12. Describe morphology of Warthin's tumour of salivary gland
13. Describe gross and microscopic appearance of leiomyoma

Very Short Question **5X2 =10 marks**

14. Describe morphological appearance of Giant cell tumor of bone
15. Define Nephrotic syndrome
16. Enumerate four risk factors of atherosclerosis
17. Enumerate causes of DIC
18. Enumerate four complications of Diabetes Mellitus

RECOMMENDED BOOKS

1. Harsh Mohan's Textbook of pathology for Dental students- Recent addition
2. Harsh Mohan's Practical Pathology Book
3. Robbins Basic Pathology

MICROBIOLOGY

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 65	**Total : 50**	**115**

GOAL

To introduce the students to the exciting world of microbes. To make the students aware of various branches of microbiology importance, significance and contribution of each branch to mankind and other fields of medicine.

OBJECTIVES

KNOWLEDGE

At the end of the Microbiology course the student is expected to:

1. Understand the basics of various branches of microbiology and able to apply the knowledge relevantly.
2. Apply the knowledge gained in related medical/ dental subjects
3. Understand and practice various methods of Sterilization and disinfection in dental clinics.
4. Have a sound understanding of various infectious diseases and lesions in the oral cavity.

SKILLS

At the end of the course the student shall be able to:

1. Student should have acquired the skill to diagnose, differentiate various oral lesions.
2. Should be able to select, collect and transport clinical specimens to the laboratory.
3. Should be able to carry out proper aseptic procedures in the dental clinic

SYLLABUS - Theory – 65 hours

S.No	Topic	No. of classes (65 Hrs)	Must know (M)/ Desirable to know (D)/ Nice to know (N)
GENERAL BACTERIOLOGY (15.3%)			
1.	Introduction & History of Microbiology	1	MK
2.	Microscopy & Morphology of bacteria	1	MK
3.	Anatomy of Bacteria	1	MK
4.	Physiology of bacteria, growth & metabolism	1	MK
5.	Sterilization (physical)	2	MK
6.	Chemical disinfectants	1	MK
7.	Bacterial genetics & drug resistance & AST	2	MK

8.	Infection	1	MK
IMMUNOLOGY (21.5%)			
9.	Structure & function of immune system	1	MK
10.	Immunity	1	MK
11.	Antigen & antibodies	2	MK
12.	Antigen–Antibody Reactions: general & Precipitation	1	MK
13.	Antigen–Antibody Reactions (cont.): Agglutination & CFT	1	MK
14.	Antigen–Antibody Reactions (cont.): RIA, ELISA, IF, NT	1	MK
15.	Complement system	1	D
16.	Immune response –Humoral & Cellular	2	MK
17.	Autoimmunity & Immuno deficiency diseases	1	MK
18.	Tumor and transplantation immunity	1	D
19.	Hypersensitivity – I	1	MK
20.	Hypersensitivity – II	1	MK
SYSTEMATIC BACTERIOLOGY (27.6%)			
21.	Staphylococcus	1	MK
22.	Streptococcus pyogenes	1	MK
23.	Pneumococci & other Streptococci	1	MK
24.	Gonococci & Meningococci	1	MK
25.	Corynebacterium diphtheriae	2	MK
26.	Classification of Clostridium & Cl. welchi	1	MK
27.	Cl. tetani	1	MK
28.	Cl. Botulinum + Non Sporing Anaerobes	1	MK
29.	Enterobacteriaceae and vibrio	1	D
30.	Mycobacterium –I: classification & M. tuberculosis	1	MK
31.	Mycobacterium –II: M. tuberculosis (cont.) & atypical mycobacteria	1	MK

32.	Mycobacterium –III: M. leprae	1	MK
33.	Actinomycetes- Actinomyces & Nocardia	1	MK
34.	Spirochetes – I: Treponema pallidum	2	MK
35.	Spirochetes – II: Leptospira & Borrelia	1	MK
36.	Normal microbial flora of the human body		MK
MYCOLOGY (4.6%)			
37.	Introduction, classification of fungi and fungal infections, lab diagnosis in general	1	MK
38.	Oral lesions of systemic fungi	1	MK
39.	Opportunistic Mycoses - Candidiasis & Aspergillosis	1	MK
VIROLOGY (16.9%)			
40.	Classification & General properties & Lab diagnosis of viruses, Bacteriophages	2	MK
41.	Herpes viruses - I	1	MK
42.	Herpes viruses - II	1	MK
43.	Picornaviruses: Polio	1	MK
44.	Measles, Mumps and rubella	1	MK
45.	Rabies virus	1	MK
46.	Hepatitis viruses – I: Hepatitis B Virus	1	MK
47.	Hepatitis virus-II: other Hepatitis viruses in brief	1	MK
48.	Human Immunodeficiency Virus	1	MK
49.	Oncogenic virus, adenovirus	1	DK
PARASITOLOGY (9.2%)			
50.	Introduction to Parasitology & Classification, Rhizopoda - E. histolytica	1	MK
51.	Sporozoa –I malarial parasite	1	MK
52.	Sporozoa –II & Oppurtunistic parasitic infections	1	MK
53.	Nematodes : Ascaris	1	MK
54.	Ancylostoma & Strongyloides	1	MK
55.	W. bancrofti	1	MK

APPLIED MICROBIOLOGY (4.6%)			
56.	Hospital Acquired Infections & Immunoprophylaxis	1	MK
57.	Biomedical waste management& Standard / Universal precautions	1	MK
58.	Oral lesions caused by microorganisms	1	MK

Practical Hrs : 50 Hrs

SL NO	Topic	No. of practicals (1 practical =2 hrs)
1.	Introduction to Microbiology	1
2.	Microscopy	1
3.	Morphology	1
4.	Bacteriological sterilization and disinfection	1
5.	Culture media	1
6.	Culture methods	1
7.	Identification of bacteria	1
8.	Antibiotic susceptibility testing	1
9.	Simple staining - saliva	1
10.	Hanging drop preparation	1
11.	Gram staining	3
12.	Ziehl Neelsen staining	3
13.	Albert staining	1
14.	Antigen antibody reactions – I ASO,CRP,RF	1
15.	Antigen antibody reactions – II RPR, Widal	1
16.	Intestinal nematodes (specimens)	1
17.	Stool examination Demonstration	3
18.	Lab diagnosis of viral infections – HIV , HBsAG	1
19.	Mycology (macros copy and Microscopy)	1

Note : one practical = two hours
Therefore 25 practical = 50 hours

Blue Print

The paper shall consist of two sections as follows:

Section A : General bacteriology, Immunology and Systematic bacteriology For 35 Marks
Section B : Virology, Parasitology, Mycology & Applied microbiology For 35 Marks

Each paper shall contain the structure as follows:

One Long answer question (LAQ) for 10 marks (Should be structured)
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10) (Should test the recall generally)

The questions can be distributed as follows: please refer to Question bank and syllabus

70 % should be from the Must know areas
20 % should be from Desirable to know areas
10 % should be from Nice to know areas

Blue print

Section A - General bacteriology, Immunology and Systematic bacteriology					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**Total 35 MARKS**
1	General bacteriology	-	2	1	12
2	Immunology	-	1	2	9
3	Systematic bacteriology	1	-	2	14
SECTION B [Virology, Parasitology, Mycology & Applied microbiology]					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**Total 35 MARKS**
8	Virology	1	-	2	14
9	Parasitology	-	1	2	9
10	Mycology	-	1	1	7
11	Applied microbiology	-	1	-	5

(UNIVERSITY MODEL QUESTION PAPER)
MICROBIOLOGY

Time: 3 hours **Max. Marks: 70**

Section A: (General bacteriology, Immunology and Systematic bacteriology)

Long Answer Question : **(1X10 = 10)**

1. Classify Streptococci. Describe in detail pathogenesis and laboratory diagnosis of Streptococcus pyogenes. **(3+4+3= 10)**

Short Answer Questions : **(3X5 = 15)**

2. Autoclave- Structure, principle, mechanism and uses.
3. Antibiotic susceptibility testing in vitro- Procedure and its importance.
4. Anaphylaxis- Definition, mechanism, clinical features and treatment.

Very Short Questions : **(5X2 =10)**

5. Venereal Disease Research Laboratory test.
6. Koch's postulates.
7. Vincent's angina.
8. Role of T and B cells in immune response.
9. Immunity- Definition and give one example for artificial passive and natural passive immunity.

Section B : (Virology, Parasitology, Mycology & Applied microbiology)

Long Answer Question : **(1X10 = 10)**

10. Describe structure, pathogenesis, and modes of transmission and laboratory diagnosis of Human ImmunodefiencyVirus. **(3+2+2+3)**

Short Answer Questions: **(3X5 = 15)**

11. Life cycle of malarial parasite in man.
12. Pathogenesis and lab diagnosis of Candidiasis.
13. Universal precautions to be followed in a health care setting.

Very Short Questions : **(5X2 =10)**

14. Pulse polio immunisation programme.
15. Viruses causing oral lesions.
16. Diagrammatic representation of eggs of Ascarislumbricoides.
17. Laboratory diagnosis of intestinal Amoebiasis.
18. Morphological classification of fungi. Give one example for each.

Recommended Books

1. Textbook of microbiology for dental students – C.P Baveja.
2. Practical pathology and microbiology for dental students- C.P Baveja.

GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 70	**Total : 20**	**90**

GOAL

The broad goal of teaching under graduate students in pharmacology is to inculcate rational and scientific basis of therapeutics keeping in view of dental curriculum and profession.

OBJECTIVES

KNOWLEDGE

At the end of the course the student shall be able to :

i. Describe the pharmacokinetics and pharmacdynamics of essential and commonly used drugs in general and in dentistry in particular,

ii. List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason,

iii. Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs,

iv. Indicate special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immuno compromised patients,

v. Integrate the rational drug therapy in dental practice,

vi. Indicate the principles underlying the concepts of "Essential drugs".

c) SKILLS:

At the end of the course the student shall be able to :

i. Prescribe drugs for common dental and medical ailments.

ii. To appreciate adverse rea ctions and drug interactions of commonly used drugs.

iii. Observe experiments designed for study of effects of drugs.

iv. Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.

SYLLABUS - Theory – 70 hours

S.No	Topic	System weightage	Duration of classes	Must know (M) / Desirable to know (D)/ Nice to know (N)
1.	General Pharmacology : a. Definitions : Pharmacology, drug, Pharmacy, sources of drugs with examples.	1.4%	1 hr	N
	b. Pharmacokinetics – ADME	2.9%	2 hr	M

	c. Routes of administration : oral, inhalation, intradermal, Subcutaneous, intramuscular, intravenous intrathecal& Newer drug regimes (Advantages and disadvantages with the examples of drugs administered).	1.4%	1 hr	M
	d. Pharmacodynamics : mechanism of action, factors modifying drug action	4.3%	3 hr	M
	e. Principles of drug therapy, Adverse drug reactions and important drug interactions, drug prescribing in pregnancy, children and elderly	5.7%	4 hr	M
	f. Rational therapeutics – P drug, essential drug list, prescription writing	1.4%	1 hr	D
2.	ANS drugs : Clinically used examples, their important pharmacological actions (which form the basis for the uses), clinicaluses along with dental uses if any and specific adverse effects of – a. Sympathomimetics b. Sympatholytics - alpha blockers, Beta - blockers. c. Cholinomimetics. d. Anticholinergics.	10%	1 hr 2 hr 2 hr 2 hr	D M D M
3.	CNS drugs and PNS.	18.6%		
	a. Clinically used opioid analgesics.		2 hr	M
	b. Clinically used local anaesthetics.		2 hr	M
	c. Clinically used muscle relaxants		1 hr	D
	d. Generalanesthetics		2 hr	M
	e. Preanaesthetic medication.		1 hr	M
	f. Antipsychotics, antidepressants, anxiolytics.		2 hr	N
	g. Sedative&hypnotics		2 hr	M
	h. Antiepileptics		1 hr	D
4.	CVS drugs	7%		
	a.Cardiac glycosides		2 hr	D
	b. Antianginal drugs		2 hr	M
	c. Antihypertensives		2 hr	M

	e. Pharmacotherapy of shocks - anaphylactic, cardiogenic hypovolemic & Septic.		1 hr	D
5.	Drugs acting on blood	11.4%		
	a. Coagulants, anticoagulants, fibrinolytics, anti platelet drugs and styptics		4 hr	M
	b. Hematinics : Iron preparation Vit.B12, Folic acid Vit. C		2 hr	M
	c. Vit.D and calcium preparations.		1 hr	D
	d. hypolipidemic drugs		1 hr	D
6.	Endocrines	7%		
	a. Drugs used in diabetes mellitus		2 hr	M
	b. Corticosteroids		2 hr	M
	c. thyroid disorders		1 hr	M
	d. sex hormones –androgens, estrogens, progestins, uterine stimulants & relaxants		2 hr	N
7.	Chemotherapy	18.6%		
	a. Sulfonamides, cotrimoxazole and quinolones		2 hr	M
	b. Beta-lactam antibiotics		2 hr	M
	c. Macrolides and aminoglycosides		2 hr	M
	d. Broad spectrum antibiotics		1 hr	M
	e. Antifungal and antiviral agents.		2 hr	D
	f. Antiprotozoal drugs		1 hr	N
	g. Antineoplastic drugs and immunosupressants		3 hr	N
	h. Antitubercular and Antileprotic drugs		2 hr	D
8.	Other drugs	15.7%		
	a. Antihistamines and antiemetics		2 hr	M
	b. Drugs used in bronchial asthma and cough		2 hr	D
	c. Drugs used in peptic ulcer, diahorea and constipation		2 hr	M
	d. treatment of rheumatoid arthritis & gout		1 hr	N

	e. vitamins		1 hr	D
	f. drugs in migraine		1 hr	D
	g. NSAIDs		2 hr	M
9.	Dental Pharmacology	7%		
	A. a. Fluoride pharmacology		1 hr	M
	b. Antiseptics, astringents & Sialogogues c. Obtundents, Mummifying agents, bleaching agents, dentrifices and disclosing agents.		3 hr	M
	c. antibiotics in periododontal disease			M
	d. antiplaque agents			M
	B. Prevention and drug therapy of emergencies in dental practice.		3 hr	
	a. Seizures			M
	b. Anaphylaxis			M
	c. Severe bleeding			M
	d. Status asthmaticus			M

Practicals : no : of hours = 20

To familiarise the student with the methodology: prescription writing and dispensing.rationale of drug combinations of marketed drugs.

1. Pharmacy- 10 hrs

1.	Introduction - equipments used in dispensing pharmacy, prescription - parts and model prescription.
2.	Demonstration of common dosage forms used in clinical practice.
3.	Mouth wash- hypertonic saline, potassium permanganate, hydrogen peroxide
4.	Mandl's throat paint
5.	Dental drops
6.	Hemostatic dental powder
7.	Tooth powder
8.	Pulp mummifying paste
9.	Lugol's iodine solution
10.	Tooth paste

2. Prescription writing – 5 hrs

1.	Case of allergic stomatitis
2.	Case of oral candidiasis
3.	Case of cellulitis
4.	Case of Vincent's disease
5.	Case of insomnia due to tooth ache
6.	Case of insomnia due to oral surgery
7.	Case of periodontitis
8.	Case of alveolar abscess
9.	Case of post extraction bleeding

3. Dosage forms – 2 hrs

1.	Tablets
2.	Implants
3.	Capsules
4.	Injections
5.	Suppositories
6.	Enema
7.	Transdermal therapeutic systems

4. Spotters – 3 hrs

1.	Herpes labialis
2.	Ulcerative gingivitis/ Vincent's infection
3.	Oral candidiasis
4.	Aphthous ulcer/ ulcerative stomatitis
5.	Angular stomatitis
6.	Periodontal abscess
7.	Ludwig's angina
8.	Aspirin
9.	Ibuprofen
10.	Lignocaine
11.	Albendazole
12.	Amoxicillin
13.	Cotrimoxazole
14.	Cetrizine
15.	Atropine
16.	Hydrocortisone

17.	Adrenaline
18.	Omeprazole
19.	Metaclopramide
20.	Folic acid
21.	Antacids
22.	Ranitidine
23.	Dexamethasone
24.	Opium seeds
25.	Clove oil
26.	Ferrous sulphate
27.	Atropabelladona
28.	Digitalis lanata
29.	Thalidomide toxicity
30.	Thiopentone
31.	Metronidazole

Blue Print

The paper shall consist of two sections as follows:

Section A: General Pharmacology and Systemic Pharmacology for 35 Marks

Section B: Chemotherapy, G.I.T, Dental Pharmacology and Miscellaneous For 35 Marks

Each SECTION shall contain the structure as follows:

One Long answer question (LAQ) for 10 marks (Should be structured)
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10) (Should test the recall generally

The questions can be distributed as follows: please refer to Question bank and syllabus

70 % should be from the Must know areas
20 % should be from Desirable to know areas
10 % should be from Nice to know areas

SECTION A [GENERAL PHARMACOLOGY AND SYSTEMIC PHARMACOLOGY]					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Peripheral nervous system			1	2
2	Central and autonomic nervous system	1		2	14
3	Blood		1		5
4	Cardiovascular system		1		5
5	Hormones			1	2

6	General pharmacology		1		5
7	Autocoids and respiratory system			1	2
SECTION B [CHEMOTHERAPY, G.I.T, DENTAL PHARMACOLOGY AND MISCELLANEOUS]					
8	Antibiotics	1		1	12
9	Gastrointestinal system		1		5
10	Miscellaneous			1	2
11	Dental pharmacology		1		5
12	Miscellaneous			1	2
13	Chemotherapy of infections		1		5
14	Dental pharmacology			1	2
15	Dental pharmacology			1	2

In view of the pharmacology syllabus for dental students, importance to be laid to teach pharmacology for dental practice, hence long question in section A to be asked from CNS – opioid analgesics, local anaesthetics and NSAIDs.long question from section B to be asked from beta lactam antibiotics, quinolones, cephalosporins, sulfonamides, cotrimoxazole, broad spectrum antibiotics, aminoglycosides and macrolides

In view of teaching pharmacology for dental practice, excess weightage of marks to be given to the following topics- NSAIDs, local anaesthetics, Opioids, General anaesthetics, Pre anaesthetic medication, Beta blockers, Anticholinergics Antihistaminics, Status asthmaticus or epilepticus or myocardial infarction or anaphylactic shock or any emergency condition treatment, Drugs for angina and hypertension, Dental implication of anticoagulants and antiplatelets, Styptics, insulin and antidiabetic drugs, adverse effect and uses of steroids, use of dentrifices, obtundents, astringents, fluoride therapy, anti caries drugs, mummifying agents, antiseptics and disinfectants, antiplaque agents in dentistry and treatment of dental infections.

(UNIVERSITY MODEL QUESTION PAPER)
GENERAL PHARAMACOLOGY

Time: 3 hours **Max. Marks: 70**

Section A
[GENERAL AND SYSTEMIC PHARMACOLOGY]

Long Answer Question **1X10 = 10 marks**

1. List the various opioid and non opioid analgesics. Describe the pharmacological actions of mophine. Describe the pharmacological role of opioids in treating dental pain. [3 +4+3]

Short Answer Questions **3X5 = 15 marks**

2. Enumerate the various drugs used to achieve hemostasis during a dental procedure.
3. summarize the drugs used in the treatment of myocardial infarction
4. Explain the clinical significance of teratogenicity with examples.

Very Short Question **5X2 =10 marks**

5. Explain the rationale behind adding adrenaline to lignocaine for tooth extraction.
6. Enumerate two drugs used in pre anaesthetic medication with the pharmacological rationale behind their use.
7. Enumerate two cardio selective beta blockers.
8. Enumerate two side effects of corticosteroids.
9. Enumerate one bronchodilator and one inhalational steroid used in the treatment of bronchial asthma.

Section B

[CHEMOTHERAPY, G.I.T, DENTAL PHARMACOLOGY AND MISCELLANEOUS]

Long Answer Questions **1X10 = 10 marks**

10. List the various groups of penicillin's with examples. Describe the antimicrobial spectrum and advantages of extended spectrum penicillin's. Explain the reason for combining amoxicillin with clavulinic acid. Enumerate one antibiotic that can be used in patients allergic to penicillin.

[3+4+2+1]

Short Answer Questions **3X5 = 15 marks**

11. Explain the mechanism of action and uses of H2 blockers.
12. Explain the pharmacological role of fluorides in dentistry.
13. Summarize the drugs used in the treatment of oral candidiasis

Very Short Questions **5X2 =10 marks**

14. Enumerate two adverse effects of gentamicin.
15. Enumerate two uses of chlorhexidine in dentistry.
16. Enumerate the antidote for paracetamol poisoning.
17. Enumerate one mummifying agent and its use in dentistry.
18. Enumerate four desensitizing agents.

Recommended Books:

1. Essentials of Pharmacology for dentistry by K.D.Tripati, 2nd edition
2. Pharmacology for dental students by PadmajaUdayakumar, 1st edition
3. Preparatory Manual for medical students by Tara Shanbag, 2nd edition

DENTAL MATERIALS

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total
Total : 80	**Total : 240**	**320**

GOAL:

Aim of the course is to present basic chemical and physical properties of Dental materials as they are related to its manipulation to give a sound educational background so that the practice of the dentistry emerged from art to empirical status of science as more information through further research becomes available. It is also the aim of the course of Dental materials to provide with certain criteria of selection and which will enable to discriminate between facts and propaganda with regards to claims of manufactures.

OBJECTIVES:

To understand the evolution and development of science of dental material.

To explain purpose of course in dental materials to personnels concerned with the profession of the dentistry. Knowledge of physical and chemical properties. Knowledge of biomechanical requirements of particular restorative procedure. An intelligent compromise of the conflicting as well as co-ordinating factors into the desired Ernest. Laying down standards or specifications of various materials to guide to manufacturers as well as to help professionals.

Search for newer and better materials which may answer our requirements with greater satisfaction. To understand and evaluate the claims made by manufactures of dental materials.

SYLLABUS CONTENT
Theory - 40hrs

Dental Materials - Prosthodontics				
S.No	**Topic**	**System weightage**	**Number of hours**	**Must know/ Desirable to know/ Nice to know -MDN**
1	Development of dental materials Governing bodies to control standards of dental materials Classification of dental materials	2.5%	1	N
2	Important mechanical properties like modulus of elasticity, Strength, Fracture resistance, Toughness, Resilience, Hardness, Proportional limit, Endurance Limit, Fatigue failure, Tarnish and Corrosion, Colour science, Metamerism, Shade selection, Creep, Sag, Flow, Viscosity, Principles of adhesion, Surface tension, Wetting, Galvanism,Biocompatibility of dental materials	10%	4	D

3	Impression materials – Ideal requirements, classification, Composition, Properties and technical considerations including working time, mixing time and setting time of each material with advantages and disadvantages	12.5%	5	M
4	Gypsum products – Origin, manufacture, Classification, Uses, Properties, Setting characteristics including expansion, Working time, mixing time, setting time, modifiers, Die materials- types and uses and Electroformed dies	10%	4	M
5	Waxes – Definition, origin, Composition, Classification and uses of each	5%	2	M
6	Denture base resins – Composition, Properties, Uses, Technical considerations – working time, setting time, polymerization[chemistry and cycles], procedure of polymerization, types of curing techniques, Tissue conditioners and soft liners	7.5%	3	M
7	Metals and Alloys – Solidification and microstructure of metals, equilibrium phases, eutectic and peritectic mixture, Classification of alloys in dentistry, noble and base metal including metal ceramic alloys classification and uses, advantages and disadvantages	10%	4	N
8	Ceramics – History, Classification, Basic composition, Firing temperature, Techniques of fabrication, Mechanical behavior of various types, methods of strengthening dental porcelain, metal ceramic systems, castable and cadcam ceramics	12.5%	5	M
9	Finishing and polishing materials – Principle of cutting and grinding and polishing. Trimming, finishing and polishing materials used for prosthetic and restorative materials including airotor abrasives	5%	2	D
10	Maxillofacial materials	5%	2	N
11	Dental Casting procedure	12.5%	5	M
12	Implant Biomaterials	7.5%	3	M

SYLLABUS CONTENT
Theory - 40hrs

Restorative dentistry				
S.No	**Topic**	**System weightage**	**Number of hours**	**Must know/Desirable to know/Nice to know -MDN**
Dental material				
1	Silver amalgam and Mercury	13.3%	6	M
2	Glass ionomer cements	6.6%	3	M
3	Light cure composite resin restoration	13.3%	5	M
4	Acid etchant and Dentin conditioners	6.6%	3	M
5	Bonding agents	10%	3	M
6	Direct gold	6.6%	3	D
7	Cast restorative materials	10%	3	D
8	Pulp protection materials—definition, objectives ,Ideal requirements and classification	6.6%	4	M
9	Zinc –oxide eugenol cement	6.6%	2	M
10	Zinc phosphate cement	6.6%	3	M
11	Zinc polycarboxylate cement	6.6%	3	M
12	Calcium hydroxide and Mineral trioxide aggregate	6.6%	2	M

Scheme of examination

Theory Exams: 70 marks
Section A: 35 marks
Section B: 35 marks
Internal assessment: 10 marks
Viva voce: 20 marks
Total = 100

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: PART –I (PROSTHODONTICS) (35 marks)
Section B: PART- II (CONSERVATIVE) (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)

Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

Section A: Prosthodontics related materials					
If LAQ is from Impression materials / Gypsum products /Dental Investments					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Introduction including ADA, Basic Properties [physical,mechanical and biological properties of dental materials		1	1	7
2	Impression material [Elastic and non elastic materials] and Gypsum products and Dental investments	1		2	14
3	Metals and alloys used in dentistry, Basic properties including solidification shrinkage, finishing and polishing materials		1	1	7
4	Dental Ceramics		1	1	7

If LAQ is from Dental Ceramics					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Introduction including ADA, Basic Properties [physical,mechanical and biological properties of dental materials		1	2	9
2	Impression materials [Elastic and non elastic materials] Gypsum products and Dental investments		1	3	11
3	Metals and alloys used in dentistry, Basic properties including solidification shrinkage, finishing and polishing materials		1	1	5
4	Dental Ceramics	1			10

Section B: Conservative Dentistry and Orthodontics related

(If the LAQ is from Silver amalgam, the pattern is as follows)					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1.	Restorative dental materials – Ideal requirements and classification			1	2
2.	Pulp protection – Ideal requirements and classification				
3.	Silver amalgam	1			10
4.	Direct Gold			1	2
5.	Restorative resins		1		5
6.	Glass Ionomer		1		5
7.	Materials used for pulp protection Varnish and liners, Base materials, Pulp Capping materials			2	4
8.	Caries prevention materials			1	2
9.	Endodontic materials				
10.	Orthodontic wires/ solder and welding		1		5

(If the LAQ is from Restorative Resins, the pattern is as follows)					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Restorative dental materials – Ideal requirements and classification			1	2
	Pulp protection – Ideal requirements and classification				
2	Silver amalgam		1		5
3	Direct Gold			1	2
4	Restorative resins		1	1	7
5	Glass Ionomer			1	2
6	Materials used for pulp protection Varnish and liners, Base materials, Pulp Capping materials	1			10
7	Caries prevention materials			1	2
8	Endodontic materials				
9	Orthodontic wires/ solder and welding		1		5

(UNIVERSITY MODEL QUESTION PAPER)
II BDS EXAMINATION
DENTAL MATERIALS

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

Section A : [Dental Materials – Prosthodontics]

Long Answer Questions : **1X10 = 10 marks**

1. Classify impression materials.[3]
   List the Ideal requirements of an impression material [3]
   Discuss about composition and advantages of an impression material used for dentulous mouth. [4]

Short Answer Questions : **3X5 = 15 marks**

2. Discuss the property of coefficient of thermal expansion as applied to metal ceramic alloys
3. Classification of alloys based on American Dental Association
4. Describe the mechanism and use of hygroscopic setting expansion in gypsum products.

Very Short Question : **5X2 =10 marks**

5. List the physical stages of polymerization in Denture base resins
6. Enumerate the alloys used for cast partial dentures
7. Discuss the classification of ceramics based on firing temperature
8. Differentiate cutting and grinding instruments with examples
9. Mention the contribution of paraffin wax to the property of a dental inlay wax

Section B
[Dental Materials – Conservative Dentistry and Endodontics & Orthodontia]

Long Answer Question : **1X10 = 10 marks**

1. Classify Glass ionomer cement.[2] Write the composition and the setting reaction of a type 2 glass ionomer cement. [6]. Justify the use of paper pad and agate spatula for its manipulation.[2]

Short Answer Questions : **3X5 = 15 marks**

2. Define welding. Explain spot welding.
3. Define trituration. Explain various trituration methods.
4. Write the classification of Composite resin based on the filler size. Add a brief note on the advantages of very fine filler particles.

Very Short Question: **5X2 =10 marks**

5. What are the cements that use acids in the liquids?
6. Write two important physical properties of Gold foil.
7. Enlist any two actions of acid etchant.
8. Write the composition of a dental varnish
9. Enlist any three endodontic irrigants

Dental Materials - Prosthodontia
(120hrs)

Manipulation of Dental Materials

Plaster – Fabrication of Cubes,Stone- Pouring of casts,Impression Compound – Making Impression of standardized models

Alginate, Zinc Oxide Eugenol Impression paste,Denture base Resin – Poly methyl methacrylate, Elastomer – Putty / Light body consistency

Evaluation for internal Assessment:

Spotters – Identification and applied aspects
Manipulation of dental materials

Dental Materials - Restorative dentistry
(120hrs)

Practical demonstration

Demo and Manipulation of zinc phosphate cement
Demo and Manipulation of zinc polycarboxylate cement
Demo and Manipulation of zinc –oxide eugenol
Demo and Manipulation of glass ionomer cement
Demonstration of silver amalgam and manipulation
Spotters demonstration

Exercises done by each student

Manipulation of zinc phosphate cement
Manipulation of zinc polycarboxylate cement
Manipulation of zinc –oxide eugenol
Manipulation of glass ionomer cement

Final Examination – Marks Distribution – Dental Materials
Theory – 100 marks
Written Paper – 70 marks [35 Prostho+35 Cons]
Viva-20 marks
Internal Assessment -10 marks

Practicals -100 marks
Exercise – 90 marks
Internal Assessment -10 marks

Recommended Books: Prosthodontics and Restorative Dentistry

Name of the Books	Authors Name	Edition	Publisher	Price	Year
Phillip's Science of Dental Materials	Kenneth J Anusavice	Twelfth	Saunders WB Saunders Co, USA	35 USD	2013
Notes on Dental Materials	EC Combe	Sixth	Mosby CV Mosby USA	4.95UKP	1992

Restorative Dental materials	Robert Craig	Eleventh	Mosby CV Mosby USA	495 INR	2002
Applied Dental Materials	John F Mc Cabe	Seventh	Blackwell Oxford Blackwell Scientific Publishers, London	320 INR	1992
Text book of Dental Materials	Craig O Brein	Sixth	Mosby CV Mosby USA	15 USD	1996

PRE-CLINICAL PROSTHODONTICS AND CROWN BRIDGE

Number of hours prescribed by DCI		
THEORY HOURS	**PRACTICAL HOURS**	**TOTAL**
TOTAL : 25	**TOTAL : 200**	**225**

THEORY-25 hrs

S.No.	TOPIC	Number of Hours	Weightage	MDN
1.	Introduction to prosthodontics	1	4%	M
2.	Introduction to complete denture	1	4%	M
3.	Steps in fabricating complete denture	1	4%	M
4.	Anatomical landmarks,impression recording for complete denture	3	12%	M
5.	Denture base and occlusal rim	2	8%	M
6.	Articulators	1	4%	M
7.	Jaw relation for complete denture	3	12%	M
8.	Principles of teeth arrangement	3	12%	M
9.	Teeth selection for complete denture	2	8%	M
10.	Occlusion for complete denture	2	8%	M
11.	Introduction to removable partial denture	1	4%	M
12.	Components of RPD	1	4%	M
13.	Introduction to FPD	1	4%	M
14.	Components of FPD	1	4%	M
15.	Relining and rebasing	1	4%	N
16.	Selective grinding for complete denture	1	4%	N

PRACTICAL - 200 hours

Pre Clinical Work

Teeth arrangement for Class I ridge relation – Completely edentulous condition – 5 Sets

Early Clinical Exposure -Clinical Work

Making impression of a dentulous mouth - Pouring Cast - Concept of designing and fabricating a Removable Partial Denture and fitted to dentulous cast

Evaluation for internal assessment:

Periodic evaluation with evaluation criteria
Internal examinations- Phased thrice to assess Teeth arrangements

Final Examination Pattern

Practicals Only - 100 marks
Practials - 60marks
Internal Assessment - 20marks
Viva - 20 marks

PRECLINICAL CONSERVATIVE DENTISTRY – THEORY

TOTAL HOURS – 25 HRS

S.No.	TOPIC	No. of hours	SYSTEM WEIGHTAGE IN % (BASED ON MDN)
1	Definition and objectives of Conservative dentistry, Tooth numbering system Review of Tooth anatomy	3	2.25
2	Dental caries • Definition • Aetiology • pathogenesis • classifications; emphasis on GV black's classification • Histopathology • Clinical presentation • Lesion detection • Disease diagnosis – Caries risk assessment • Latest classifications	8	6
3	Tooth preparation • Definition • Types of preparation • Conventional cavity Vs conservative tooth preps • Cavity nomenclatures		
	• Basic principles in cavity preparation • Comparison of basic principles for various restorative materials	6	4.5
4	Armamentarium and chair side protocols • Finger rests, grasps, chair position • Classification • Hand cutting instruments • Rotary cutting instruments • Matrices and wedges • Filling instruments • Equipments	8	6

DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS
SYLLABUS FOR PRECLINICAL CONSERVATIVE DENTISTRY

TOTAL NUMBER OF HOURS - 200

S.No.	Exercises	Number of exercises	Perform	Assist / observe
1	Plaster model	11	Perform	
Amalgam RESTORATIVE EXERCISES				
3	Class I	7	Perform	
4	Class II	17	Perform	
5	Class V	2	Perform	
LIGHT CURE COMPOSITE RESIN RESTORATIVE EXERCISES				
6	Class IV	1	perform	
PULP CAPPING PROCEDURE				
7	Indirect pulp capping	1	Perform	
8	Direct pulp capping	1	Perform	
9	Non operative treatment - Pit and fissure sealant	2	Perform	
	GLASS IONOMER RESTORATIVE EXERCISES			
10	OPERATIVE TREATMENT –FISSUROTOMY	2	Perform	
11	OPERATIVE TREATMENT-PREVENTIVE RESIN RESTORATION	2	Perform	
12	INLAY / CAST RESTORATIONS	1		Assist/observe
13	ROOT CANAL TREATMENT	1		Assist/observe

Recommended text books

S.No.	Text book name	Authors name
1	Operative Dentistry	Marzouk
2	Text book of Operative Dentistry	Ramya Raghu

III YEAR SYLLABUS

General Medicine

Number of hours prescribed by DCI		
Theory hours	Clinical hours	Total
III year BDS 60	**III year BDS 90**	**150**
Total : 60	**Total : 90**	

GOAL

Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry.

1. Special precautions/ contraindication of anaesthesia and various dental procedures in different systemic diseases.
2. Oral manifestations of systemic diseases.
3. Medical emergencies in dental practice.

A dental student should be taught in such a manner he/she is able to record the arterial pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body – diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice.

OBJECTIVES
KNOWLEDGE

The dental graduates during training in the Department of General Surgery should acquire

- Training should provide sufficient knowledge on human disease to enable the student to understand its manifestations as relevant to the practice of dentistry.

SKILL

- This Requires clinical teaching on patients and shall be carried out in inpatient and outpatient medical departments and specialist clinics.
- Clinical instructions should enable the student to understand and perhaps diagnose common systemic diseases which have relevance to dental practice, by adopting a systemic approach of history taking and clinical examination.

ATTITUDE

- The student should also realise the significance of various general and special investigations in the diagnosis of disease.
- The ability to recognise physical and mental illness, dealing with emergencies, effective communication with patients, interaction with various professional colleagues also become important aspects of this training.

SYLLABUS III YEAR
Theory – 60 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	Introduction to Medicine	5%	3	M
2.	Enteric fever, AIDS, Herpes Simplex, Herpes Zoster, Syphillis Diphtheria	8.3%	5	M
3.	InFectious mononucleosis, Mumps, Measles, Rubella, Malaria	8.3%	5	D
4.	Stomatitis, Gingival Hyperplasia, Dysphagia, Acid Peptic Disease, Jaundice, Acute and Chronic Hepatitis, Cirrhosis of Liver ascites	6.6%	4	M
5.	Diarrhoea, Dysentery, Amoebiasis, Malabsorption	6.6%	4	D
6.	CVS	10%	6	M
7.	Pneumonia, COPD, Pulmonary TB, Bronchial Asthma	10%	6	M
8.	Lung Abscess,Pleural Effusion, pneumothorax, Bronchiectaisis, Lung Cancers	10%	6	D
9.	Haematology	10%	6	M
10.	Acute nepritis	10%	6	M
11.	Renal Failure	10%	6	D
12.	Facial Palsy, Facial Pain,Epilepsy,Headache	10%	6	M
13.	Meningitis,Examination of Cranial Nerves & Comatose Patient	10%	6	D
14.	Avitaminosis	6.6%	4	M
15.	Balanced Diet,PEM	6.6%	4	D
16.	DM, Acromegaly, Hypothyroidism, Thyrotoxicosis, Calcium Metabolism & Parathyroids	10%	6	M
17.	Addison Disease,Cushing Syndrome	10%	6	D
18.	Critical Care	5%	3	D

Clinical- 90 hours

SL NO	Clinical	Observe/ assist/ perform
1	History elicitation – 10 HRS	Observe
2	General examination- 10 HRS	Observe
3	Examination of cvs- 20HRS	Observe
4	Examination of RS-15 HRS	Observe
5	Examination of Abdomen 15 HRS	Observe
6	Examination of CNS 20 HRS	Observe

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100
2. Clinical Examination: 90 marks

Blue print of the question paper

The paper shall consist of two sections as follows:
Section A:
Section B:

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions will be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

Section -A

Long answer question-LAQ	Short answer questions-SAQ	Very short answer questions-VSAQ
Cardiovascular system Abdomen	Haematology Infectious diseases Clinical pharmacology	Cardiovascular system, Abdomen, Infectious diseases, Clinical pharmacology
1 Question from either system 1x10=10 marks	1 Question from each system- 3x5 = 15 marks	1 Question from each system 5x2 = 10 marks

Section -B

Long answer question -LAQ	Short answer questions-SAQ	Very short answer questions-VSAQ
Central nervous system Respiratory system	Nephrology ,Nutrition, Endocrinology	Central nervous system, Respiratory system Nephrology, Nutrition, Endocrinology
1 Question from either system 1x10=10 marks	1 Question from each system-3x5 = 15 marks	1 Question from each system 5x2 = 10 marks

(UNIVERSITY MODEL QUESTION PAPER)

Time: 3 hours **Max. Marks: 70**

Section A and B should be answered in separate answer books
Illustrate your answers with suitable diagram

Section –A (35 marks)

Long Answer Question **1x10=10**

1. What is cirrhosis of liver? write the etiology and pathogenesis of liver cirrhosis. Enumerate the complications of cirrhosis of liver .(2+5+3)

Short Answer Questions **3x5 = 15**

2. Draw a labeled coagulation cascade
3. List the opportunistic infections which occur in AIDS
4. Mention the first line anti tuberculous drugs with its side effects

Very Short Answer Questions **(5x2 = 10)**

5. Mention 4 causative organisms for native valve endocarditis
6. What are the viruses that can cause Cirrhosis of liver ?
7. What is the cause for haemophilia ?
8. Name four common gram positive cocci
9. Mention 2 adverse effects of NSAID

SECTION –B

Long Answer Question **1 x 10 = 10**

10. What are the viruses that cause viral meningitis. Describe the clinical features, cerebrospinal fluid findings and management of viral meningitis (2+3+2+3)

Short Answer Questions

11. Enumerate the symptoms and sign of hyperthyroidism.
12. Write the pre renal causes of Acute renal failure
13. Hypervitaminosis of Vitamin A

Very Short Answer Questions **(5x2 = 10)**

14. Define Transient ischemic attack
15. Define chronic bronchitis
16. Classify Diabetes mellitus

17. Acute tubular necrosis of the kidney can be caused by aminoglycoside antibiotic drug like.....
18. Mention some of the clinical features of scurvy.

Recommended text books

Textbook of Medicine – Davidson
Textbook of Medicine - Hutchinson

General Surgery

Number of hours prescribed by DCI		
Theory hours	Clinical hours	Total
III year BDS 60	**III year BDS 90**	**150**
Total : 60	**Total : 90**	

GOAL

To acquaint the student with various diseases, which may require surgical expertise and to train the student to analyze the history and be able to do a thorough physical examination of the patient. The diseases as related to head and neck region are to be given due importance, at the same time other relevant surgical problems are also to be addressed. At the end of one year of study the student should have a good theoretical knowledge of various ailments, and be practically trained to differentiate benign and malignant diseases and be able to decide which patient requires further evaluation.

OBJECTIVES

KNOWLEDGE

The dental graduates during training in the Department of General Surgery should acquire

- Training should provide sufficient knowledge on human disease to enable the student to understand its manifestations as relevant to the practice of dentistry.

SKILL

- This Requires clinical teaching on patients and shall be carried out in inpatient and outpatient medical departments and specialist clinics.
- Clinical instructions should enable the student to understand and perhaps diagnose common systemic diseases which have relevance to dental practice, by adopting a systemic approach of history taking and clinical examination.

ATTITUDE

- The student should also realise the significance of various general and special investigations in the diagnosis of disease.
- The ability to recognise physical and mental illness, dealing with emergencies, effective communication with patients, interaction with various professional colleagues also become important aspects of this training.

SYLLABUS III YEAR

Theory – 60 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	History Of Surgery	3.3%	2	N
2.	General Principles Of Surgery	5%	3	M
3.	Wounds	3.3%	2	M

4.	Inflammation	6.6%	4	M
5.	Infections	6.6%	4	M
6.	Transmissable Viral Infections	6.6%	4	M
7.	Shock And Haemorrhage	6.6%	4	M
8.	Tumours, Ulcers, Cysts, Sinus And Fistulae	6.6%	4	M
9.	Diseases Of Lymphatic System	6.6%	4	M
10.	Diseases Of The Oral Cavity	6.6%	4	M
11.	Diseases Of Larynx, Nasopharynx	6.6%	4	N
12.	Nervous System	3.3%	2	N
13.	Fractures	6.6%	4	D
14.	Principles Of Operative Surgery	6.6%	4	M
15.	Anomalies Of Development Of Face	3.3%	2	D
16.	Diseases Of Thyroid And Parathyroid	8.3%	5	M
17.	Swellings Of The Jaw	3.3%	2	M
18.	Biopsy	5%	3	D

Clinical- 90 hours

SL NO	Clinical	Observe/ assist/ perform
1	History Taking and Examination of Ulcer	Observation/Assist
2	History Taking and Examination of Swelling	Observation/Assist
3	History Taking and Examination of Thyroid	Observation/Assist
4	History Taking and Examination of Head & Neck Malignancies	Observation/Assist
5	History Taking and Examination of Surgical OPD	Observation/Assist

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100
2. Clinical Examination: 90 marks

Blue print of the question paper

The paper shall consist of two sections as follows:
Section A: (35 marks) and
Section B: (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions will be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

Section - A (Pattern - I)		**35 Marks**			
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Wounds, Skin grafting		1		5
2	Inflammation, infection		1		5
3	Haemorrhage, blood transfusion	1			10
4	Cyst, Ulcer, sinus & fistula			2	4
5	Gangrene, Malignant ulcer			2	4
6	Salivary Gland		1	1	7
				Total	35

Section - A (Pattern - II)		**35 Marks**			
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Wounds, Skin grafting		1		5
2	Inflammation, infection		1		5
3	Haemorrhage, blood transfusion		1	1	7
4	Cyst, Ulcer, sinus & fistula			2	4
5	Gangrene, Malignant ulcer			2	4
6	Salivary Gland	1			10
				Total	35

Section - B (Pattern - I)		**35 Marks**			
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Thyroid	1			10
2	Oral cavity		1	2	9
3	Neck Swelling, Benign & Malignant Tumour of head & Neck		1		5

4	Jaw Swelling & mandible fracture		1	1	7
5	Tracheostomy & Burns & Cleft lip & Cleft Palate			2	4
				Total	35

Section - B (Pattern - II) 35 Marks					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Thyroid		1	2	9
2	Oral cavity	1			10
3	Neck Swelling, Benign & Malignant Tumour of head & Neck		1		5
4	Jaw Swelling & mandible fracture		1	1	7
5	Tracheostomy & Burns & Cleft lip & Cleft Palate			2	4
				Total	35

(UNIVERSITY MODEL QUESTION PAPER)

Time: 3 hours **Max. Marks: 70**

Section A and B should be answered in separate answer books
Illustrate your answers with suitable diagram

Section –A (35 Marks)

Long Answer Question **1 X 10 = 10**

1. List the indications of blood transfusion. Describe the blood fractions used. Enumerate the complications of blood transfusion. (3+4+3)

Short Answer Questions. **3x5=15**

2. Describe the clinical feature and Management of keloid.
3. Describe the clinical feature and Management of sebaceous cyst.
4. Pathology and management of warthins tumour.

Very short Answer Questions **5x2=10**

5. List 4 complications of parotid surgery.
6. List 4 toxins secreted by clostridium welchi.
7. Enumerate the clinical types of Actinomycosis.
8. List the types of Malignant Melanoma.
9. Define Ludwig's Angina.

Section –B (35 Marks)

Long Answer Question **1 X 10 = 10**

10. Classify Thyroid Malignancy. Describe the clinical Features & Management of Papillary carcinoma thyroid. **(2+3+5)**

Short Answers Questions **3x5=15**

11. Management of Carcinoma lip
12. Clinical Features and Management of Branchial Cyst.
13. Pathology & Management of Adamantinoma.

Very Short answer Questions **5x2=10**

14. List any 4 premalignant conditions of oral cancer.
15. List 4 types of Epulis
16. Lefort fracture type 3.
17. Parkland formula used in burns.
18. Embryogenesis of cleft palate.

Recommended text books

Short practice of surgery – Baily & Love

Oral Pathology & Microbiology

Number of hours prescribed by DCI		
Theory hours	Practical hours	Total hours
145hrs	**130hrs**	**275hrs**

GOAL

To acquaint the student with various diseases, which may require surgical expertise and to train the student to analyze the history and be able to do a thorough physical examination of the patient. The diseases as related to head and neck region are to be given due importance, at the same time other relevant surgical problems are also to be addressed. At the end of one year of study the student should have a good theoretical knowledge of various ailments, and be practically trained to differentiate benign and malignant diseases and be able to decide which patient requires further evaluation.

OBJECTIVES
KNOWLEDGE

At the end of Oral Pathology & Microbiology course, the student should be able to comprehend -

1. The different types of pathological processes, that involve the oral cavity.
2. The manifestations of common diseases, their diagnosis & correlation with clinical pathological processes.
3. An understanding of the oral manifestations of systemic diseases should help in correlating with the systemic physical signs & laboratory findings.
4. The student should understand the underlying biological principles governing treatment of oral diseases.
5. The principles of certain basic aspects of Forensic Odontology.

SKILL

1. Microscopic study of common lesions affecting oral tissues through microscopic slides & projection slides.
2. Study of the disease process by surgical specimens.
3. Study of teeth anomalies/polymorphisms through tooth specimens & plaster casts.
4. Microscopic study of plaque pathogens.
5. Study of haematological preparations (blood films) of anaemias&leukemias.
6. Basic exercises in Forensic Odontology such as histological methods of age estimation and appearance of teeth in injuries.

SYLLABUS III YEAR
Theory – 145 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	Developmental Disturbances	8.3%	12	M
2.	Dental caries	3.2%	5	M
3.	Diseases of the pulp and Periapical tissues	2.5%	4	M
4.	Benign &Malignant tumors of oral cavity	19.1%	30	M
5.	Salivary Glands pathology	5.1%	7	D
6.	Regressive alterations of teeth	2%	3	M
7.	Infections of the Oral cavity	7.6%	12	M
8.	Tumours of odontogenic origin	6.4%	10	M
9.	Odontogenic cysts	6.4%	6	M
10.	Allergic and Immunological Diseases of the Oral cavity	2.5%	4	M
11.	Spread of Oral Infection	1.3%	2	M
12.	Physical and Chemical Injuries of the Oral Cavity	3.2%	5	M
13.	Biopsy, Cytology and Healing of Oral Wounds	2%	3	D
14.	Disease of Bone	6.4%	8	D
15.	Disorders of the Temporomandibular Joint	2%	3	M
16.	Blood Dyscrasias	5.1%	6	N
17.	Diseases of Periodontology	3.2%	5	M
18.	Diseases of Skin	6.4%	8	M
19.	Oral Aspects Of Metabolic Disease	3.2%	5	N
20.	Diseases of Nerves & Muscle	2%	3	D
21.	Introduction to Forensic Odontology	2.5%	4	D

Practicals: 130hrs

SL NO	CONTENT	Duration
1	Developmental Disturbances	20
2	Dental caries	5
3	Diseases of the pulp and Periapical tissues	10
4	Benign & Malignant tumors of oral cavity	30
5	Salivary Glands pathology	15
6	Infections of the Oral cavity	5
7	Tumours of odontogenic origin	10
8	Odontogenic cysts	15
9	Disease of Bone	10
10	Diseases of Skin	10

Scheme of examination

1. Theory : 100 marks
   Theory exam : 70 marks *(Section A: 35 marks; Section B: 35 marks)*
   Internal assessment: 10 marks
   Viva voce: 20 marks
2. Practicals: 100 marks
   Practical exam -90marks
   Internal assessement-10 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: Oral Pathology for 35 marks
Section B: Developmental disturbances, Microbiology& Forensic Odontology for35 marks

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

Distribution of Topics and type of Questions in theory paper

Type of question and Marks	Content
Section A (35 marks) Essay- (1x10 marks)	Oral pathology (Benign And Malignant Tumors Of Oral Cavity, Salivary Glands,Cyst And Odontogenic Tumors /Disease Of Skin)
Short Notes (3x5 marks)	Oral pathology
Very short notes (5x2 marks)	Oral pathology
SectionB (35 marks) Essay – (1x10 marks)	Oral pathology (Developmental Disturbances Of Oral And Para Oral Structures / Dental caries / pulpal and peri-apical infections) Or Microbiology (infection – bacterial, viral and fungal)

Short Notes (3X5 marks)	Developmental disturbances, Microbiology & Forensic Odontology
Very Short Answer (5x2 marks)	Developmental disturbances, Microbiology & Forensic Odontology

The questions will be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

Oral Pathology & Microbiology
Section A

Model 1: If LAQ is from the Benign And Malignant Tumors Of Oral Cavity, Salivary Glands,Cyst And Odontogenic Tumors The Matrix is as follows:

SL NO	TOPICS	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	35 MARKS
1.	Benign And Malignant Tumors Of Oral Cavity, Salivary Glands,Cyst And Odontogenic Tumors	1	2		20
2.	Physical & Chemical Injuries Regressive Alterations Healing Metabolic Disease ,Allergic And Immunologic Disease Of Oral Cavity			1	2
3.	Disease Of Bone And Joint Disease Of Nerves And Muscles			2	4
4.	Disease Of Blood And Blood Forming Organs			1	2
5.	Disease Of Skin		1	1	7

Model 2: If LAQ is from the Disease Of Skin, the Matrix is as follows:

SL NO	TOPICS	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	35 MARKS
1.	Benign And Malignant Tumors Of Oral Cavity, Salivary Glands,Cyst And Odontogenic Tumors		2	3	16
2.	Physical & Chemical Injuries Regressive Alterations Healing Metabolic Disease, Allergic And Immunologic Disease Of Oral Cavity			1	2
3.	Disease Of Bone And Joint Disease Of Nerves And Muscles			1	2

4.	Disease Of Blood And Blood Forming Organs		1		5
5.	Disease Of Skin	1			10

SECTION B:

Model 1: If LAQ Is From The Developmental Disturbances Of Oral And Para Oral Structures, the Matrix Is As Follows:

SL NO	TOPICS	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	35 MARKS
1.	Developmental Disturbances Of Oral And Para Oral Structures	1		1	12
2.	Dental Caries		1	1	7
3.	Infections (Viral, Bacterial, Fungal)		1	1	7
4.	Disease Of Pulp, Periapical,Periodontium And Spread Of Oral Infection		1	1	7
5.	Forensic Odontology			1	2

Model 2: If LAQis from the Dental Caries, the matrix is as follows

SL NO	TOPICS	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	35 MARKS
1.	Developmental Disturbances Of Oral And Para Oral Structures		1	1	7
2.	Dental Caries	1			10
3.	Infections (Viral ,Bacterial, Fungal)		1	2	9
4.	Disease Of Pulp, Periapical,Periodontium And Spread Of Oral Infection		1	1	7
5.	Forensic Odontology			1	2

(UNIVERSITY MODEL QUESTION PAPER)
III BDS EXAMINATION

ORAL PATHOLOGY AND MICROBIOLOGY

Time: 3 hours **Max. Marks: 70**

Section A and B should be answered in separate answer books
Illustrate your answers with suitable diagram

Section –A

LONG ANSWER QUESTION **(1 X 10 = 10)**

1. Discuss in detail on the types, clinical features, histopathology and laboratory investigations of pemphigus.

   (Types of pemphigus – 2, Clinical features – 2,Histopathology – 2,Laboratory investigations – 1, Diagram – 2)

SHORT ANSWER QUESTIONS **(3 X 5 = 15)**

2. Write a note on the histopathologic features of Adenoid cystic carcinoma.
   (What is it – 1, Histopathologic features – 3,Diagram – 1)
3. Discuss on the etiopathogenesis of oral submucous fibrosis.
   (What is OSMF – 2, Etiopathogenesis of OSMF – 3)
4. What is Pernicious anemia? Write a note on lab investigations & diagnosis of pernicious anemia.
   (What is Pernicious anemia – 1, Clinical features of Pernicious anemia – 2 Lab investigation – 2)

VERY SHORT ANSWER QUESTIONS **(5 X 2 = 10)**

5. What is van der Woude syndrome
6. What is Cafe-au –lait spot?
7. Define cyst.
8. Define abfraction.
9. List out the histological variants of ameloblastoma.

SECTION - B

LONG ANSWER QUESTION **(1X10=10)**

1. Define dental caries, discuss on the classification, clinical features and histopathology of dentinal caries.
   (Definition – 2,Classification – 2,Clinical features – 2,Histopathology – 2, Diagram – 2)

SHORT ANSWER QUESTIONS **(3 X 5=15)**

2. Discuss on the pathogenesis and oral manifestations of herpes simplex.
   (What is Herpes simplex – 1,Pathogenesis – 1,Oral manifestation – 3)

3. What is the role of bite marks in forensic odontology?
   (What is bite mark – 2, Role – 3)

4. What are the oral manifestations of syphilis?
   (What is syphilis – 1,Stage of syphilis – 1,Oral manifestation – 3)

VERY SHORT ANSWER QUESTIONS **(5 X 2=10)**

5. What is "bay cyst"?
6. What is foci of infection?
7. What are Tzanckcells.
8. What are the micro-organism that cause ANUG.
9. What is Carabelli'strait ?

RECOMMENDED BOOKS

1.	A Text Book of Oral Pathology	- Shafer, Hine & Levy.
2.	Oral Pathology - Clinical Pathologic correlations	- Regezi&Sciubba.
3.	Oral Pathology	- Soames&Southam.
4.	Oral Pathology in the Tropics	- Prabhu, Wilson, Johnson &Daftary
5.	Oral and Maxillofacial Pathology	- Neville, Damm, Allen, Bonquet

IV YEAR SYLLABUS

Oral Medicine and Radiology

Number of hours prescribed by DCI				
Theory hours		Practicals hours		Total
III year BDS	**IV year BDS**	**III year BDS**	**IV year BDS**	**235**
20	**45**	**70**	**100**	
Total : 65		**Total : 170**		

GOAL

To prevent, control and Treat oral diseases and promote oral health through organized community efforts Learn to Manage Oral Manifestations in a Medically Compromised Patient.

OBJECTIVES

KNOWLEDGE

The dental graduates during training in the Department of Oral Medicine & Radiology should acquire

- adequate knowledge which are required for carrying out all the activities involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues.
- Proficiency in Identifying Oral manifestations of systemic disorders and Management of Medically compromised patients.
- The graduate should also understand the concept of Radiology and Maxillofacial Imaging.

SKILL

- To obtain proper clinical history, examination of the patient, perform diagnostic procedures and order essential radiographic and laboratory tests and interpret them and to arrive at a diagnosis about the Orofacial Diseases and to render non- surgical treatment.
- To perform with competence various Intraoral Radiographic procedures.

ATTITUDE

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Orodental problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time.
- Develop the ability to communicate with professional colleagues.
- Develop ability to teach undergraduates, present seminars and develop leadership skills

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following:

1. Able to identify precancerous and cancerous lesions of the oral cavity and refer to the concerned specialty for their management
2. Should have an adequate knowledge about medical complications that can arise while treating systemically compromised patients and take prior precautions/ consent from the concerned medical specialist
3. Should have an adequate knowledge about common laboratory investigations and interpretation of their results

4. Have adequate knowledge about radiation health hazards, radiations safety and protection
5. Competent to take intra oral radiographs and interpret the radiographs findings
6. Gain adequate knowledge of various extra oral radiographic procedures, TMJ radiography and sialography
7. Be aware of the importance of intra and extra-oral radiographs in forensic identification and age estimation
8. Should be familiar with jurisprudence, ethics and understand the significance of dental records with respect to law.

SYLLABUS III YEAR
Theory – 20 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	Introduction to Oral Medicine	5%	1	D
2.	Principles of oral diagnosis	10%	2	M
3.	Regressive alterations of teeth	2.5%	1	M
4.	Principles, procedures, and protocol for asepsis, sterilization, infection control	2.5%	1	M
5.	Oral sepsis and its effect on general system	2.5%	1	M
6.	Diagnosis Of Dental Caries, Pulp and Periapical pathologies and Sequalae., Periodontal Diseases	10%	2	M
7.	Differential diagnosis of orofacial pain	10%	2	M
8.	Orofacial Pigmentation: Exogenous	2.5%	1	M
9.	Pharmcotherapeutics	5%	1	D
10.	Introduction to Oral Radiology	5%	1	M
11.	Basic physics in radiology	5%	1	M
12.	Radiographic equipment	10%	2	M
13.	Films	10%	2	M
14.	Principles of Intra oral Radiography, techniques	10%	1	M
15.	Radiographic interpretation	10%	1	M

SYLLABUS IV YEAR
Theory – 45 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1	Acute infections of oral and para oral structures	6%	2	M
2	White and red lesions of oral mucosa	6%	2	M
3	Ulcerative lesions: Acute, chronic Recurrent and Multiple and single ulcers.	6%	2	M
4	Diagnostic protocol for differential diagnosis of cysts, odontogenic, non- odontogenic and developmental cysts, Cysts of soft tissues	4.5%	2	M
5	Oral manifestations of Metabolic disorders	4.5%	2	N,D
6	Dermatological diseases importance to dentistry	2%	2	D
7	Disease of tongue and tongue in systemic diseases	2.5%	1	D
8	Concept of pre malignancy, Premalignant lesions and conditions Potentially Malignant disorders	6%	2	M
9	Oral Cancer, aetiology and Classification, Epidemiology, Screening	6%	2	M
10	Diseases of salivary glands	4.5%	2	M
11	Autoimmune diseases affecting oral cavity	4.5%	2	M
12	Allergic Reactions	2.5%	1	D
13	Diseases of TMJ	6%	3	D
14	Diseases of maxillary sinus Infections, Cysts and Tumours, Malignancies	2%	2	D
15	Oral manifestations of systemic diseases and medical emergency management	4.5%	1	M
16	Maxillofacial trauma clinical diagnostic protocol	2.5%	1	N
17	Psychosomatic diseases, burning mouth syndrome, glossopyrosis, glossodynia, Orofacial dysesthesia, cancerophobia, MPDS, taste and smell abnormalities	2%	2	N

18	Forensic Odontology including radiography in forensic odontology	2%	2	N
19	Radiographic interpretation II Radiographic artefacts.	6%	2	M
20	Radiographic features of common pathologies of jaw bones	6%	2	D
21	TMJ radiography	2.25%	1	D
22	Principles of radiotherapy	2%	2	M
23	Principles of extra oral radiography	2.5%	1	D
24	Contrast radiography	2%	1	N
25	Panoramic Radiography and Conventional Tomography	3%	1	D
26	Advance radiographic techniques	2.25%	2	D

Clinical- 170 hours

SL NO	Clinical	Observe/ assist/ perform
1	Case History Recording 02 Cases	Observe
2	Case History Recording 03Cases	Assist
3	Case History Recording 10Cases with Indicated Radiographs(Including 2 cases of Oral Mucosal Lesions	Perform
4	Intraoral Radiography 10(Including IOPA with Bisecting Angle, Paralleling, Bitewing, digital radiographs & Occlusal Radiographs)	Observe
5	Intraoral Periapical Radiography(Including IOPA with Bisecting Angle, Paralleling, Bitewing & Occlusal Radiographs)	Assist
6	Intraoral Periapical Radiography 10(Including IOPA with Bisecting Angle 08, Paralleling08, Bitewing02 & Occlusal Radiographs04 with Tracings of Normal Anatomy)	Perform
7	Extra Oral Radiography 05	Observe
8	Panaromic Radiography- 1	Perform
9	Biopsy of mucosal lesion- 1	Assist
10	Vital Tissue Staining	Observe/Assist

Integrated teaching syllabus

SL NO	Topics	Speciality Integrating
1	Dental Caries, Pulp & Periapical Pathologies	Cons& Endo, Oral Pathology
2	Periodontal Diseases	Periodontics
3	Potentially malignant Disorders & Oral Cancer	Oral Surgery & Oral Pathology
4	TMJ Disorders	Oral Surgery, Prosthodontics
5	Oral Manifestations of Systemic Disorders and Management of Medically Compromised patients	Oral Surgery, Oral Pathology

Chair-side teaching syllabus

SL NO	Topics	Hours
1	Demonstration of Case History Taking , General Physical Examination, Extra Oral, Examination of TMJ, Lymph nodes, & Intra Oral Hard & Soft Tissue Examination.	2 Hrs
2	Demonstration of Use of Radiographic Equipment's and Accessories, Dark Room Procedures	1 Hr
3	Demonstration of Intraoral Radiographic techniques	1 Hr
4	Prescription writing, Referral forms, Opinion Seeking Forms and Investigation Requisition forms	1Hr
5	Caries Risk Assessment, Diagnosis and Management of Pulpal & Periapical Pathologies	2 Hrs
6	Diagnosis and Management of Periodontal Pathologies	1 Hr
7	Identification and management of Common Oral Mucosal lesions	1 Hr
8	Demonstration of Extraoral Radiographic Techniques	1 Hr
9	Demonstration of Panaromic Radiographic Techniques	Half Hr
10	Tour of Advanced Imaging Systems at Department of MGMCRI	1 Hr

Scheme of examination

1. Theory Exams: 70 marks

   Section A: 35 marks
   Section B: 35 marks

   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Clinical Examination: 90 marks

Blue print of Clinical Examination

The Clinical Examination will be conducted in 2 sessions

Session 1:

The Candidate will be expected to take Detailed Case History of a given patient, arriving at a Clinical Diagnosis and Differential diagnosis. Further the Candidate is required to make required Radiograph, advice for specific Investigation and arrive at a Final Diagnosis and Chart out the Specific treatment plan. (Duration 45 Mins + 15 Mins)

Case History and Clinical Diagnosis/ Chair side Case Discussion – 50 Marks
Radiographic Technique, Interpretation and Diagnosis – 30 Marks
Treatment Plan – 10 Marks

Session 2:

Theory Viva - Voce duration not exceeding 20 Mins per Candidiate
Clinical Internal Assessment: 10 marks; Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: Oral Medicine (35 marks) and
Section B: Oral Radiology(35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions will be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

Section A

If LAQ from red and white lesion, the matrix is as follows					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Ulcerovesiculobullous lesions		1x5		5
2	Red and white lesions	1x10			10
3	Pigmented lesions			1x2	2
4	Cysts and tumors			1x2	2
5	Oral cancer			1x2	2
6	Salivary gland diseases		1x5		5
7	TMJ and Orofacial pain			1x2	2
8	Systemic disease and its oral manifestions		1x5		5
9	Pharmacology			1x2	2

If LAQ from Ulcerovesiculobullous lesions, the matrix is as follows					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Ulcerovesiculobullous lesions	1x10			10
2	Red and white lesions		1x5		5
3	Pigmented lesions			1x2	2
4	Cysts and tumors			1x2	2
5	Oral cancer		1x5		5
6	Salivary gland diseases			1x2	2
7	TMJ and Orofacial pain		1x5		5
8	Systemic disease and its oral manifestions			1x2	2
9	Pharmacology			1x2	2

SECTION B

If LAQ from radiation physics, the matrix is as follows					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Radiation physics	1x10			10
2	Radiation biology			1x2	2
3	Health physics		1x5		5
4	Projection geometry			1x2	2
5	Intraoral and extraoral radiographic technique		1x5		5
6	Orthopantomograph and digital imaging			1x2	2
7	Specialized radiographic techniques			1x2	2
8	Radiographic appearance of systemic diseases			1x2	2
9	X ray film processing and quality assurance		1x5		5

If LAQ from radiation biology, the matrix is as follows					
SL NO	**TOPICS**	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35 MARKS**
1	Radiation physics		1x5		5
2	Radiation biology	1x10			10
3	Health physics		1x5		5
4	Projection geometry			1x2	2
5	Intraoral and extraoral radiographic technique			1x2	2
6	Orthopantomograph and digital imaging			1x2	2
7	Specialized radiographic techniques			1x2	2
8	Radiographic appearance of systemic diseases			1x2	2
9	X ray films,processing and quality assurance		1x5		5

(UNIVERSITY MODEL QUESTION PAPER)

Time: 3 hours **Max. Marks: 70**

Section A and B should be answered in separate answer books
Illustrate your answers with suitable diagram

Section –A

LONG ANSWER QUESTION **1x10=10 marks**

1. A 50 year old female patient presented with chronic multiple irregular ulcers of the oral cavity with positive Nikolsky's sign. What is the provisional diagnosis? (1 mark))

   Write about Etiopathogenesis, Clinical features, Investigations and Management of the condition. (2+2+2+3marks)

SHORT ANSWER QUESTION **3x5=15 marks**

2. Correlate the clinical findings in a patient with bilateral white keratotic radiating lines in the buccal mucosa .Write the appropriate diagnosis and describe the clinical features for the same.
3. Explain the management of trigeminal neuralgia
4. List any five causes of oral cancer.

VERY SHORT ANSWER QUESTION **5x2=10 marks**

5. List two oral manifestations of Diabetes mellitus.
6. Mention two anti viral drugs along with their doses.
7. List two sources for endogenous pigmentation.
8. List two clinical features of Sjogren's syndrome.
9. Mention two inflammatory cyst of odontogenic origin.

SECTION B

LONG ANSWER QUESTION **1x10=10 marks**

10. Define radiation. (2 marks)
    Describe with a neat labelled diagram the parts of the x ray machine.(5 marks)
    List and explain the factors affecting the production of X ray beam (3 marks)

SHORT ANSWER QUESTION **3x5=15 marks**

11. Mention two indications for Water's view and explain the technique.
12. Discuss five causes for dark radiographs
13. Discuss radiation protection for the patient.

VERY SHORT ANSWER QUESTION **5x2=10 marks**

14. Mention two disadvantages of OPG.
15. List two radiographic features of hyperparathyroidism.
16. Mention two causes for magnification of radiographic image.
17. List two uses of ultrasonography.
18. Mention the features of radiation caries

Recommended text books

1. Greenberg, Glick, Ship. Burket's Oral Medicine. 10, 11, 12th edition. BC Decker.
2. Stuart. C. White, Michael J Pharoah. Oral Radiology. Principles and Interpretation. 6,7thedition. Elsevier
3. Hutchinson. Hutchinson's Clinical Medicine. 22nd edition. Saunder.
4. Shivapathasundaram. Shafer's Text book of Oral pathology. 5th edition. Elsevier.
5. Freny R Karjodhkar. Textbook of Dental and maxillofacial Radiology. 2nd edition. Jaypee
6. Joen Lannucci Haring, Lauria Jansen. Dental Radiography. Principles and techniques. 2nd edition. Elsevier.
7. Somen Das. A Manual on Clinical Surgery. 10th edition.

ORAL & MAXILLOFACIAL SURGERY & ORAL IMPLANTOLOGY

Number of hours prescribed by DCI				
Theory hours		Practicals hours		Total
III year BDS 20	**IV year BDS 50**	**III year BDS 70**	**IV year BDS 200**	**340**
Total : 70		**Total : 270**		

GOAL

"To produce a graduate who is competent in performing extraction of teeth under both local and general anaesthesia, prevent and manage related complications, acquire a reasonable knowledge and understanding of the various diseases, injuries, infections occurring in the Oral & Maxillofacial region and offer solutions to such of those common conditions and has an exposure in to the in-patient management of maxillofacial problems."

OBJECTIVES

KNOWLEDGE & UNDERSTANDING:

1. Able to apply the knowledge gained in the related medical subjects like pathology, microbiology and general medicine in the management of patients with oral surgical problem.
2. Able to diagnose, manage and treat (understand the principles of treatment of) patients with oral surgical problems.
3. Knowledge of range of surgical treatments.
4. Ability to decide the requirement of a patient to have oral surgical specialist opinion or treatment.
5. Understand the principles of in-patient management.
6. Understanding of the management of major oral surgical procedures and principles involved in patient management.
7. Should know ethical issues and communication ability.

SKILLS:

1. A graduate should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner. Be able to understand requisition of various clinical and laboratory investigations and is capable of formulating differential diagnosis.
2. Should be competent in the extraction of teeth under both local and general anaesthesia.
3. Should be able to carry out certain minor oral surgical procedures under L.A. like frenectomy, alveolar procedures & biopsy etc.
4. Ability to assess, prevent and manage various complications during and after surgery.
5. Able to provide primary care and manage medical emergencies in the dental office.
6. Understanding of the management of major oral surgical problems and principles involved in inpatient management.

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following:

1. Able to apply the knowledge gained in the basic medical and clinical subjects in the management of patients with surgical problems
2. Able to diagnose, manage and treat patients with basic oral surgical problems
3. Have a broad knowledge of maxillofacial surgery and oral implantology
4. Should be familiar with legal, ethical and moral issues pertaining to the patient care and communication skill
5. Should have acquired the skill to examine any patient with an oral surgical problem in an orderly manner
6. Understand and practice the basic principles of asepsis and sterilization
7. Should be competent in the extraction of the teeth under both local and general anaesthesia
8. Competent to carry out certain minor oral surgical procedure under LA liketrans-alveolar extraction, frenectomy, dento alveolar procedures, simple impaction, biopsy etc
9. Competent to assess, prevent and manage common complications that arise during and after minor oral surgery
10. Able to provide primary care and manage medical emergencies in the dental office
11. Familiar with the management of major oral surgical problems and principles involved in the in patient management

SYLLABUS III YEAR

Theory: no: of hours = 20

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	Introduction - Definition, aims, objectives and scope of oral surgery	5%	1	M
2.	Local Anaesthesia	45%	9	M
3.	General anesthesia.[GA]	20%	4	D
4.	Exodontia	20%	4	M
5.	Management of medically compromised patients / Medical problems in dentistry	10%	2	M

SYLLABUS IV YEAR
Theory: no: of hours = 50

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1	Dento-alveolar surgery	8%	4	M
2	Endodontic surgery	4%	2	D
3	Infections	8%	4	M
4	Cysts of the jaws	6%	3	M
5	Oral implantology	4%	2	N
6	Ethics	2%	1	M
7	Pre prosthetic surgery	4%	2	D
8	Diseases of maxillary sinus	6%	3	D
9	TMJ disorders	8%	4	N
10	Tumors	12%	5	N
11	Fractures of the jaws	16%	8	M
12	Developmental deformities	6%	3	N
13	Salaivary gland diseases	4%	2	M
14	Neurological disorders	6%	3	D
15	Cleft lip and palate	4%	2	N
16	Pre-cancerous lesions and conditions	2%	1	M

Clinicals: no. of hours = 270

SL NO	Clinical cases	Observe/ assist/ perform
1	Examination of patient with oral surgical problem in a orderly manner	Observe/Perform
2	Instrumentation	Observe/Perform
3	Suturing techniques	Observe/Perform
4	Frenectomy	Assist/Perform
5	Alveolar procedures	Assist/Perform
6	Biopsy	Assist/Perform
7	Primary care & Management of medical emergencies	Observe/Perform

8	Assessment, prevention & management of common complication that arises during and after minor oral surgery	Observe/Perform
9	Extraction – 30 cases	Observe/Perform
10	Incision & Drainage	Demonstration
11	Enucleation & Marsupialisation	Observe
12	Fracture reduction and Stabilisation under GA	Observe
13	Dental Implants	Observe
14	Orthognathic surgery	Observe

Integrated teaching syllabus (to include topics that are common with different specialities)

SL NO	Topics	Speciality Integrating
1	Dental Caries, Pulp & Periapical Pathologies	Cons& Endo, Oral Pathology,
2	Periodontal Diseases	Periodontics
3	Potentially malignant Disorders & Oral Cancer	Oral medicine, Oral Pathology
4	Dentofacial deformity	Orthodontics
4	TMJ Disorders	Oral medicine, Prosthodontics
5	Oral Manifestations of Systemic Disorders and Management of Medically Compromised patients	Oral medicine, Oral Pathology

Chair-side teaching syllabus

SL NO	Topics
1	Examination of patient with oral surgical problem in a orderly manner
2	Demonstration of Instruments used in exodontia
3	Demonstration of suturing techniques
4	Prescription writing, Referral forms, Opinion Seeking Forms and Investigation Requisition forms
5	Diagnosis and management of medical emergencies
6	Assessment, prevention & management of common complication that arises during and after minor oral surgery
7	Sterilisation and aseptic techniques
8	Demonstration of injection techniques
9	Demonstration of extraction techniques

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Clinical Examination: 90 marks

   Case History: 30 marks
   Extraction: 50 marks
   Stage viva: 10marks

   Clinical Internal Assessment: 10 marks
   Total = 100 marks

Blue print of Clinical Examination

The Clinical Examination will be conducted in 2 sessions

Session 1:

The Candidate will be expected to take Detailed Case History of a given patient, arriving at a Clinical Diagnosis and Differential diagnosis. Further the Candidate is required to administer local anaesthesia and perform dental extraction and deliver post extraction instructions. (Duration 45 Mins + 15 Mins)

Case History– 30 Marks
Extraction – 50 Marks
Stage viva – 10Marks

Session 2:

Theory Viva- Voce duration not exceeding 20 Mins per Candidiate
Clinical Internal Assessment: 10 marks
Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: Applied Basic Sciences , Medical Emergencies, Minor Oral Surgery, Trauma (35 marks)

Section B: Cysts And Tumors, Oral Cancer, Temporomandibular Joint Surgery, Orthognathic Surgery, General Anesthesia, Cleft Lip And Palate, Diseases Of Salivary Glands (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

In section – A, if long answer question is from minor oral surgery then the blue print will be

SL NO	Section – A	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	Total -35
1	APPLIED BASIC SCIENCES		1	1	7
2	MEDICAL EMERGENCIES		1	1	7
3	MINOR ORAL SURGERY. (Local anesthesia, exodontia, principles of oral surgery) preprosthetic surgery, infections, osteoradionecrosis, maxillary sinus, nerve disorders, implantology	1		1	12
4	TRAUMA		1	2	9

In section – B, if long answer question is from tempero-mandibular joint then the blue print will be

SL NO	TOPICS	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	Total – 35
1	CYSTS AND TUMORS		1	1	7
2	ORAL CANCER			1	2
3	TEMPOROMANDIBULAR JOINT SURGERY	1			10
4	ORTHOGNATHIC SURGERY		1		5
5	GENERAL ANESTHESIA			1	2
6	CLEFT LIP AND PALATE			1	2
7	DISEASES OF SALIVARY GLANDS		1	1	7

In section – B, if long answer question is from tempero-mandibular joint then the blue print will be

SL NO	TOPICS	LAQ (1X10)	SAQ (3X5)	VSAQ (5X2)	Total – 35
1	CYSTS AND TUMORS		1	1	7
2	ORAL CANCER			1	2
3	TEMPOROMANDIBULAR JOINT SURGERY	1			10
4	ORTHOGNATHIC SURGERY		1		5
5	GENERAL ANESTHESIA			1	2
6	CLEFT LIP AND PALATE			1	2
7	DISEASES OF SALIVARY GLANDS		1	1	7

(UNIVERSITY MODEL QUESTION PAPER)
IV BDS EXAMINATION

ORAL SURGERY

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

Section – A

Long answer questions (LAQ) (10)

1. Define local anesthesia [2]. Classify local anesthesia [4] and explain the various theories of local anesthesia, enumerating the mechanism of action [4].

Short answer questions (SAQ) (15)

2. Write in detail about bacterial endocarditis prophylaxis before performing dental extractions?
3. Describe briefly regarding clinical features and management of a hyperventilating patient?
4. Explain in detail about Le-fort I lines?

Very short answer questions (VSAQ) (10)

5. Calculate the maximum dosage of local anesthesia (2% lignocaine + 1: 200,000 adrenaline), for 75 year old man with a weight of 70 kgs?
6. Enlist the branches of maxillary artery?
7. Mention the drugs with their clinical implications in the management of anaphylactic shock?
8. List the different ablative surgical procedures for the management of trigeminal neuralgia?
9. Classify dental implants?

Section – B

Long answer questions (LAQ) (10)

10. Define apertognathia [2], discuss the various causes for anerior open bite[3] and describe various orthognathic surgical procedures for the management of anterior open bite[5]?

Short answer questions(SAQ) (15)

11. Define cyst? Draw the flowchart for classification of cysts of jaws, oral and facial soft tissues?
12. Describe briefly about the various neck dissection techniques?
13. Describe the possible complications during temporomandibular joint surgeries?

Very short answer questions (VASQ) (10)

14. Enlist the various conservative approaches in the management of cysts?
15. Write a note on brachytherapy?
16. Mention the different stages of general anesthesia?
17. List the complications following the surgical management of cleft lip and palate?
18. Define sialolithiasis. Enlist the various techniques in the management of sialolith?

Recommended books

1. Impacted teeth; Alling John F &etal.

2. Principles of oral and maxillofacial surgery; Vol.1,2& 3 Peterson LJ &etal.
3. Text book of oral and maxillofacial surgery; Srinivasan B.
4. Handbook of medical emergencies in the dental office, Malamed SF.
5. Killeys Fractures of the mandible; Banks P.
6. Killeys fractures of the middle 3rdof the facial skeleton; Banks P.
7. The maxillary sinus and its dental implications; McGovanda
8. Killey and Kays outline of oral surgery – Part-1; Seward GR &etal
9. Essentials of safe dentistry for the medically compromised patients; McCarthy FM
10. Oral & maxillofacial surgery, Vol 2; Laskin DM
11. Extraction of teeth;Howe, GL
12. Minor Oral Surgery; Howe.GL
13. Contemporary oral and maxillofacial surgery; Peterson I.J.& EA
14. Oral and maxillofacial infections; Topazian RG & Goldberg MH

DEPARTMENT OF PERIODONTOLOGY

Number of hours prescribed by DCI				
Theory hours		Clinical hours		Total
III year BDS 40	**IV year BDS 80**	**III year BDS 52**	**IV year BDS 72**	**244**
Total : 120		**Total : 124**		

GOAL

To prevent and control oral diseases and promote oral health through organized oral hygiene practices.

OBJECTIVES

The student shall acquire the skill to perform dental scaling, diagnostic tests of periodontal diseases; to use the instruments for periodontal therapy and maintenance of the same.

The student shall develop attitude to impart the preventive measures namely, the prevention of periodontal diseases and prevention of the progress of the disease.

The student shall also develop an attitude to perform the treatment with full aseptic precautions; shall develop an attitude to prevent iatrogenic diseases; to conserve the tooth to the maximum possible time by maintaining periodontal health and to refer the patients who require specialist's care.

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following:

KNOWLEDGE

- Diagnose the patients periodontal problem, plan appropriate periodontal treatment
- Familiar with concepts of osseointegration and basic surgical aspects of Implantology

SKILLS

- Competent to perform oral prophylaxis, subgingival scaling, root planning and minor periodontal surgical procedures

ATTITUDE

- Competent to educate and motivate the patient
- Give proper post treatment instructions and do periodic recall and evaluation

SYLLABUS CONTENT
THIRD YEAR – Total hours – 40

S. No	Topic	Weightage	Must Know/ Desirable to know / Nice to know	No of hours
NORMAL PERIODONTIUM				
1.	The gingiva		M	2

	The tooth supporting structures • Periodontal Ligament • Cementum • Alveolar Process		M	3
3.	Aging and Periodontium		M	1
CLASSIFICATION & EPIDEMIOLOGY OF PERIODONTAL DISEASES				
4.	Classification of Diseases and Conditions Affecting The Periodontium (AAP World workshop 1999 classification)		M	1
ETIOLOGY OF PERIODONTAL DISEASES				
5	Microbiology of Periodontal Diseases		M	2
6	The Role Of Dental Calculus And Other Predisposing Factors		M	1
7	Genetic Factors Associated With Periodontal Diseases		D	1
8	**Immunity and Inflammation: Basic Concepts** • Cell of Immunity and Inflammation • Complement • Transendothelial Migration • Leukocyte Functions		M	1
9	Smoking and Periodontal Diseases		M	1
10	Host Modulation		M	1
RELATIONSHIP BETWEEN PERIODONTAL DISEASE & SYATEMIC HEALTH				
11	**Influence of systemic disorders and stress on the periodontium**			
	• Endocrine disorders and hormonal changes • Stress and psychosomatic disorders		M	1
	• Nutritional influences • Other systemic conditions		D	
12	**Periodontal medicine: impact of periodontal infection on systemic health**			
	• Periodontal disease and coronary heart disease, Stroke • Periodontal disease and pregnancy outcome • Periodontal disease & Diabetes mellitus		M	2
	• Periodontal disease and chronic obstructive pulmonary disease • Periodontal disease and acute respiratory infections		N	

13.	Oral malodor		M	1
PERIODONTAL PATHOLOGY – GINGIVAL DISEASE				
14	Defense Mechanisms Of Gingiva		M	1
15	Gingival Inflammation		M	1
16	Clinical Features Of Gingivitis		M	1
17	Gingival Enlargement		M	2
18	Acute Gingival Infections		M	1
19	Gingival Diseases In Childhood		D	1
20	Desquamative Gingivitis		M	1

FINAL YEAR
Theory Hours - 80

S. No	Topic	Weightage	Must Know/ Desirable to know / Nice to know	No of hours
PERIODONTAL PATHOLOGY – PERIODONTAL DISEASE				
21.	The Periodontal Pocket		M	1
22.	Bone Loss And Patterns Of Bone Destruction		M	1
23.	**Periodontal Response To External Forces** • Trauma from occlusion • Pathologic tooth migration		M	1
24.	Chronic Periodontitis		M	1
25.	Necrotising Ulcerative Periodontitis		M	1
26.	Aggressive Periodontitis		M	1
27.	Pathology & Management Of Periodontal Problems In Patients With HIV Infection		M	1
TREATMENT OF PERIODONTAL DISEASE – DIAGNOSIS, PROGNOSIS & TREATMENT PLAN				
28.	Clinical diagnosis		M	1
29.	**Radiographic aids in diagnosis of periodontal disease** • Normal Interdental septa • Distortions produced by variations in radiographic technique • Bone destruction in Periodontal disease		M	1

	• Radiographic appearance of periodontal disease • Skeletal disturbances manifested in jaws			
	• Digital intraoral radiography & Additional radiographic criteria			
30.	Advanced Diagnostic Technique		D	1
31.	Risk Assessment		M	1
32.	Determination Of Prognosis		M	1
33.	Treatment Plan		M	1
34.	Rationale For Periodontal Treatment		M	1
35.	**Periodontal therapy in female patient**			
	• Puberty & Pregnancy		M	1
	• Mensus, Oral contraceptives & menopause		M	1
36.	**Periodontal treatment of medically compromised patients**			
	• Cardiovascular diseases • Endocrine disorders • Pregnancy • Hemorrhagic & Blood dyscrasias		M	1
	• Renal, Liver, Pulmonary, Chemotherapy, Infectious disease		D	
Treatment of aggressive and a typical forms of periodontitis				
37.	Treatment of aggressive and atypical forms of periodontitis		M	1
38.	Treatment of acute gingival diseases		M	1
39.	Treatment of periodontal abscesses		M	1
Treatment of Periodontal Disease – Non Surgical Periodontal Therapy				
40.	**Phase 1 periodontal therapy**			
	• Mechanical plaque control measures • Chemical plaque control		M	2
41	Scaling and root planning		M	1
42	Chemotherapeutic agents		M	1
43	Host modulation agents		M	1
44	Sonic and ultrasonic instrumentation		D	1

45.	Supragingival and subgingival irrigation		D	1
46.	Adjunctive role of orthodontic therapy		D	1
47.	Periodontic – endodontic continuum		M	1
TREATMENT OF PERIODONTAL DISEASE – SURGICAL THERAPY				
48.	Phase II periodontal therapy		M	1
49	General principles of periodontal surgery		D	1
50.	Surgical anatomy of periodontium		D	1
51.	Gingival surgical techniques		M	1
52.	Treatment of gingival enlargements		M	1
53.	Periodontal flap		M	1
54.	Flap technique for pocket therapy		M	2
55.	Resective osseous surgery		M	1
56.	**Reconstructive periodontal surgery**			
	• Non bone graft associated tech • Graft materials associated tech		M	2
57.	Furcation involvement & management		M	1
58.	**Periodontal plastic & esthetic surgery**			
	• Augmentation apical to recession • Augmentation coronal to recession		M	2
59	Recent advances in surgical technology		D	1
TREATMENT OF PERIODONTAL DISEASE – PERIODONTAL RESTORATIVE INTERRELATIONSHIP				
60	Restorative interrelationships		M	1
ORAL IMPLANTOLOGY				
61	Biological aspects of oral implants		M	1
62	Clinical aspects and evaluation of the implant patient		D	1
63	Standard implant surgical procedures		D	1
64	Implant related complications and failures		D	1
PERIODONTAL MAINTENANCE				
65	Supportive periodontal treatment		M	1

CLINICAL TEACHING SYLLABUS

S.No	Clinical	No of cases	Observe/ Assist/ Perform
1.	Case History Recording	01	Observe
2.	Case History Recording	05	Perform
3.	Intraoral Periapical Radiography	05	Perform
4.	Hand Scaling	05	Observe
5.	Oral hygiene instructions	05	Observe
6.	Hand Scaling with oral hygiene instructions	50	Perform

INTEGRATED TEACHING TOPICS/ SYLLABUS

S. No	Chapter	Topic	Departments involved
1.	Periodontic – endodontic continuum	Pulpal disease	Cons & Endo
		Effect of periodontitis on dental pulp	Cons & Endo
		Differences between pulpal and periodontal diseases	Perio
		Management of endo –perio lesions	Perio
2.	Pre prosthetic surgery	Mucogingival problems	Perio
		Ridge and socket preservation procedures	Prostho & perio
		Crown lengthening procedures	Perio
		Alveolar ridge reconstruction	Perio
		Biologic considerations for restorative relationships (biologic width)	Perio
3.	Perio-ortho inter relationship	Classification on malocclusion	Ortho
		Trauma from occlusion	Perio
		Adjunctive Orthodontic therapy in periodontal management	Perio
		Pre orthodontic osseous surgery	Perio
		Orthodontic treatment of osseous defects and gingival discrepancies	Perio
4.	Oral implantology	Biological aspects of oral implants	Perio
		Implant geometry and surface characteristics	Prostho
		Hard and soft tissue interface	Perio
		Clinical and radiographic evaluation of implant patient	Perio and prostho
		Diagnostic imaging for implants	Oral medicine and perio

		Implant surgical procedures	Perio
		Biomechanics and prosthetic considerations for implants	Prostho
		Implant related complications and failures	Perio
5.	Oral manife-stations of dermatologic disorders	Desquamative gingivitis	Perio, oral pathology, oral medicine
6.	Periodontal medicine	Periodontitis & systemic associations	Perio & general medicine

CHAIRSIDE TEACHING SYLLABUS

S.No	Topic	Hours
STERILIZATION AND INFECTION CONTROL		
1.	Sterilization and disinfection	1
2.	Biomedical waste disposal	1
CASE HISTORY		
3.	General examination – vital signs	1
4.	Oral/Gingival/Periodontal examination	2
5.	Radiographic and laboratory interpretations	1
6.	Prognosis & Treatment plan	1
INSTRUMENTATION		
7.	Periodontal instruments	1
8.	Principles of instrumentation	1
ORAL PROPHYLAXIS		
9.	Scaling and root planning	1
10.	Polishing &OHI	1
SURGICAL TECHNIQUES		
11.	Abscess drainage	1
12.	Gingival surgical techniques	1
13.	Mucogingival surgical techniques	1
14.	Suturing and periodontal dressing	1
15.	Post operative care	1

SCHEME OF EXAMINATION

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Clinical Examination: 90 marks
   Case presentation with indices: 50 marks
   Preventive procedures: 25 marks
   Stage viva: 15 marks

   Clinical Internal Assessment: 10 marks
   Total = 100 marks

Blue print of Clinical Examination
Blue print of question paper
Final BDS exams

The paper shall consist of two sections as follows:
Section A: for 35 marks
Section B: for 35 marks

Each paper shall contain the structure as follows:

- One Long answer question (LAQ) for 10 marks (Should be structured)
- Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
- Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10) (Should test the recall generally)

The questions can be distributed as follows: *please refer to Question bank and syllabus*

- 70 % should be from the Must know areas
- 20 % should be from Desirable to know areas
- 10 % should be from Nice to know areas

MATRIX 1:
If the LAQ is from normal periodontium, the matrix is as follows:

	SECTION A	**LAQ (1X10=10)**	**SAQ (3X5=15)**	**VSAQ (5 X2 =10)**	**35 MARKS**
1	Normal Periodontium	1		1	12
2	Etiology of periodontal diseases		1	2	9
3	Gingival / periodontal pathology		1	1	7
4	Periodontal disease and systemic health		1		5
5	Classification of periodontal disease			1	2

If the LAQ is from treatment of gingival and periodontal diseases, the matrix is as follows:

	SECTION A	LAQ (1X10=10)	SAQ (3X5=15)	VSAQ (5 X2 =10)	35 MARKS
1	Treatment of gingival and periodontal diseases – Surgical, periodontal emergencies	1		1	12
2	Diagnosis, prognosis & treatment plan		1	2	9
3	Treatment of gingival and periodontal diseases – Non surgical		1	1	7
4	Oral Implantology			1	2
5	Supportive periodontal therapy		1		5

MATRIX 2:
If the LAQ is from Etiology of periodontal diseases, the matrix is as follows

	SECTION A	LAQ (1X10=10)	SAQ (3X5=15)	VSAQ (5 X2 =10)	35 MARKS
1	Normal Periodontium		1	1	7
2	Etiology of periodontal diseases	1		1	12
3	Gingival / periodontal pathology		1	2	9
4	Periodontal disease and systemic health			1	2
5	Classification of periodontal disease		1		5

If the LAQ is from Diagnosis, prognosis & treatment plan, the matrix is as follows

	SECTION A	LAQ (1X10=10)	SAQ (3X5=15)	VSAQ (5 X2 =10)	35 MARKS
1	Treatment of gingival and periodontal diseases – Surgical, periodontal emergencies		1	1	7
2	Diagnosis, prognosis & treatment plan	1		1	12
3	Treatment of gingival and periodontal diseases – Non surgical		1	2	9
4	Oral Implantology			1	2
5	Supportive periodontal therapy		1		5

(UNIVERSITY MODEL QUESTION PAPER)
IV BDS EXAMINATION
PERIODONTICS

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**

Section – A

Long answer question: **1×10 = 10**

1. Define gingiva (2). Write the parts of gingiva (2). Add a note on gingival fibers (6).

Short answer questions: **3×5 = 15**

1. Enlist (1) and explain any four predisposing factors (4) for dental calculus formation.
2. Define periodontal pocket (1). Add a note on pathogenesis of periodontal pocket (4).
3. What is the effect of diabetes mellitus on periodontal pathogenesis.

Very short answer questions: **5×2 = 10**

4. What are fenestration & dehiscence (1+1)
5. Define dental plaque.
6. Write two clinical differences between chronic and aggressive periodontitis.
7. Write any two immunological effects of smoking on periodontium
8. Write any two drugs causing gingival enlargement.

Section B

Long answer question: **1×10 = 10**

1. What is furcation involvement (2). Classify furcation involvement according to Glickman under the following headings: Type of pocket, Nabers probe penetration, bone loss & prognosis (8).

Short answer questions: **3×5 = 15**

2. Explain the phases of periodontal therapy in treatment plan (4). Write the correct sequence of periodontal therapy (1).
3. What is host modulatory therapy (2). Give an example for Subantimicrobial dose doxycycline and mention the correct dosage of the same (1+2)
4. Write two rationale for supportive periodontal therapy (2). Write the periodontal maintenance care at each recall visit (3)

Very short answer questions: **5×2 = 10**

1. Write two indications of gingivectomy
2. Define prognosis
3. Write two differences between universal and area specific curettes
4. Define osseointegration
5. What is DNA probe?

RECOMMENDED BOOKS

1. Newman MG. Carranza's clinical periodontology. 11th ed. Elsevier; 2011
2. Cohen, E. Atlas of Cosmetic and Reconstructive Periodontal Surgery. 3rd ed. Hamilton: BC Deker Inc.; 2006
3. Sato N. Periodontal surgery – A clinical atlas, quintessence publishers, Germany; 2000.
4. Lindhe J, Niklaus L, Thorkild K. Clinical Periodontology and implant dentistry. 5th edition, Blackwell Publisinh company: United Kingdom ;2008.

PAEDODONTICS & PREVENTIVE DENTISTRY

Number of hours prescribed by DCI				
Theory hours		Clinical hours		Total
III year BDS 20	**IV year BDS 45**	**III year BDS 70**	**IV year BDS 100**	**235**
Total : 65		**Total : 170**		

GOAL

1. Primary concern is to promote the oral health of infants, children, adolescents and children with special health care needs
2. Achieve a high and ethical standard of practice, promotion of education, and research in Pediatric and Preventive Dentistry
3. Emphasise in developing a positive attitude towards Dentistry

OBJECTIVES:

KNOWLEDGE: During the training in Pediatric and Preventive Dentistry the student should acquire knowledge

1. To consider child patient as a " WHOLE " , every effort is made to improve the dental health as it is always in accordance with the general health of the patient
2. To have a thorough knowledge in early diagnosis and prompt treatment,
3. To have adequate knowledge to observe and control the necessary developing dentition of the child by himself intervening or referring to a specialist

SKILL: After training in Pediatric and Preventive Dentistry the student should be able to demonstrate skills necessary for practise

1. Obtain proper clinical history ,methodological examination of the child patient , perform essential diagnostic procedures and interpret them, arrive at a reasonable diagnosis and deliver effective treatment , keeping in mind the expectations and the right of the patient to receive the best possible treatment
2. Be competent to treat dental diseases occurring in children ,prevent and manage complications if encountered while carrying out various dental procedures.
3. Manage to repair and restore the lost/tooth structure so as to maintain harmony between hard and soft tissues of the oral cavity.
4. Control pain and anxiety among the patients during dental procedures.
5. Manage the child with special health care needs effectively and efficiently.
6. Promote oral health and prevent oral diseases where possible .

ATTITUDE : the student should develop during the training period the following attidtudes

1. Develop an attitude to adopt ethical principles in all aspects of pedodontic practise
2. Professional honesty and integrity to be inculcated

3. Deliver treatment care irrespecitive of social status, caste creed or religion
4. Willingness to share knowledge and clinical experience with professional colleagues
5. Resepct child patient`s rights and privileges, including child patient`s right to information and right to seek second opinion.
6. Develop an attitude to seek opinion from allied medical and dental specialities as and when required

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following

1. Able to instill a positive attitude and behaviour in children towards oral health and understand the principles of Pediatric and Preventive Dentistry right from birth to adolescence.
2. Able to guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry right from birth to adolescence
3. Able to treat dental diseases occurring in children through adolescence.
4. Able to manage children with special health care needs effectively and efficiently, tailored to the needs of individual requirement and conditions

SYLLABUS CONTENT
Theory: no: of hours =45

IV BDS				
S.No	**Topic**	**System weightage**	**Number of hours**	**Must know/ Desirable to know/ Nice to know**
1	Introduction To Pedodontics & Preventive Dentistry	2.2 %	1	M
2	Growth & Development	4.4 %	2	D
3	Development Of Occlusion From Birth Through Adolescence	4.4 %	2	M
4	Dental Anatomy And Histology	4.4%	2	D
5	Dental Radiology Related To Pedodontics	2.2 %	1	M
6	Oral Surgical Procedures In Children	4.4%	2	D
7	Dental Caries	6.6%	3	M
8	Gingival & Periodontal Diseases In Children	4.4 %	2	M
9	Child Psychology	8.9%	4	M
10	Behaviour Management	11.1%	5	M
11	Pediatric Operative Dentistry	8.9%	4	M

12	Pediatric Endodontics	8.9 %	4	M
13	Traumatic Injuries In Children	11.1%	5	M
14	Preventive & Interceptive Orthodontics	8.9%	4	M
15	Oral Habits In Children	8.9%	4	M
16	Dental Care Of Children With Special Needs	11.1%	5	M
17	Congenital Abnormalities In Children	2.2%	1	D
18	Dental Emergencies In Children & Their Management	2.2%	1	D
19	Dental Materials Used In Pediatric Dentistry	2.2%	1	D
20	Preventive Dentistry	6.6%	3	M
21	Dental Health Education & School Dental Health Programmes	2.2%	1	N
22	Fluorides	8.9%	4	D
23	Recent Advancements In Pediatric Dentistry	2.2%	1	N
24	Case History Recording	2.2%	1	M
25	Setting Up Of Pedodontic Clinic & Ethics	2.2%	1	D
26	Child Abuse & Neglect	2.2%	1	D

THIRD YEAR BDS: Pre clinical work

SL NO	III BDS Pre Clinical hours	Observe/ assist / perform
1	01- Upper Hawleys appliance with tongue spikes	Perform
2	01- Construction of Oral Screen	Perform
3	01- Construction of Functional Space Maintainer	Perform
4	01 each- Cl I,II,III, IV,V Cavity preparation and restoration in Typhodont / extracted teeth	Perform
5	01-Pit and fissure sealants on extracted tooth	Perform
6	01-Case history discussion , demonstration	Observe
7	01- Seminar presentation	Perform

Chair side teaching syllabus:

SL NO	Topics	Hours
1	Sterilisation and infection control , waste disposal	1 Hrs

2	Morphological differences between primary and permanent teeth	1 Hr
3	Principles of cavity preparation and modifications in primary teeth	1 Hr
4	Methods of isolation and use of rubber dam	1 Hr
5	Base , sub- base ,Varnish, Amalgam , GIC, Composite restorative materials	1 Hr
6	Pit and fissure sealants , ART, PRR	1 Hr
7	Brief discussion on habit breaking appliances	1 hour

SL NO	Fourth BDS Clinical hours	Observe/ assist/ perform
1	Tooth identification, Case History discussion / Recording, demonstration of Fl application, Pit and Fissure sealants 01 Case each	Observe
2	05 - Detailed Case History Recording	Perform
3	10 case - Case History Recording , with Oral prophylaxis & oral hygiene instructions	Perform
4	05- cases of Case History Recording, Fl application ,	Perform
5	10 cases - cavity preparation and restorations in primary dentition	Perform
6	02 cases - Pit and Fissure Sealants	Perform
7	10 cases- Extractions with post extraction instructions	Perform
8	Pulp therapy (Pulpotomy, Pulpectomy Apexification, Apexogenesis)	Observe
9	Construction of fixed Space maintainers / stainless steel crowns	Observe/ Assist
10	Behaviour management/ shaping of uncooperative/ special child	Observe/ Assist

Fourth year BDS Chair-side teaching syllabus:

SL NO	Topics	Hours
1	Case History recording , Tooth identification	2 Hrs
2	Morphological differences between primary and permanent teeth with their clinical significance	1 Hr

3	Aniticipatory guidance in Pediatric oral health	1 Hr
4	Clinical significance/ future advances of Radiographs in Pediatric dentistry	1 Hr
5	Identification and management of anomalies / self correcting anomalies of dentition	1 Hr
6	Applications of learning theories and management in child behaviour management	1 Hr
7	Pharmacological considerations in Pediatric dentistry :- Commonly used drugs with prescription writing, Referral forms, consent forms	1 Hr
8	Plaque control measures , diet counselling , parent education	1 Hr
9	Dental materials used in pediatric dentistry and update on newer materials	1 Hr

Integrated teaching syllabus (to include topics that are common with different specialities)

SL NO	Topics	Speciality Integrating
1	Cariology , Restorative dentistry , pulp and pulpal diseases	Conservative & Endodontics
2	Gingival & Periodontal Diseases	Periodontics
3	Preventive and interceptive Orthodontics	Orthodontics
4	Infection control, local anesthesia & Exodontia	Oral Surgery
5	Oral Manifestations of Systemic Diseases and Management of Medically Compromised patients	Oral Surgery, Oral Pathology
6	Preventive dentistry, fluorides	Public health dentistry

EARLY CLINICAL EXPOSURE:

SL NO	I BDS	Hours
1	Tooth numbering system , teeth identification ,chronology of eruption of teeth , eruption & shedding	2 hours
	II BDS	
1	Sterilisation & infection control ,inflammation & repair, drugs used in pediatric dentistry and prescription writing	2 hours

SCHEME OF EXAMINATION

1. **Theory Exams: 70 marks**
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. **Clinical Examination: 90 marks**
   Case presentation and procedure s: 60 marks
   Spotters : 20 marks
   Record book : 10 marks
   Clinical Internal Assessment: 10 marks
   Total = 100 marks

BLUE PRINT OF THEORY QUESTION PAPER :

The paper shall consist of two sections as follows:

Section A: Pediatric dentistry (35 marks)
Section B: Pediatric and Preventive Dentistry (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

BLUE PRINT OF CLINICAL EXAMINATION :

CASE HISTORY RECORDING = 45 marks
CLINICAL PROCEDURE: (either one of the procedure) = 15 marks
Oral prohylaxis and/or fl application
Pit & fissure sealants
Pit cavity preparation and GIC restoration
SPOTTERS = 20 marks
RECORD BOOK = 10 marks

SECTION - A

If LAQ from Preventive Dentistry, the matrix is as follows					
SL NO	**Topic**	**LAQ (1x 10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35**
1	Fundamentals of Pedodontics, case history, diagnosis & treatment planning, chronology, morphology, radiology			1	2
2	Growth & development Development of dentition & occlusion		1	1	7
3	Preventive dentistry	1			10
4	Child psychology &behavior management		1	1	7
5	Dental care of Children with special health care needs & genetic disorders		1	1	7

6	Dental materials used in pediatric dentistry & ethics			1	2

If LAQ from Child Psychology & Behaviour Management, the matrix is as follows					
SL NO	**Topic**	**LAQ (1x 10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35**
1	Fundamentals of Pedodontics, case history, diagnosis & treatment planning, chronology, morphology, radiology			1	2
2	Growth & development Development of dentition & occlusion		1	1	7
3	Preventive dentistry		1	1	7
4	Child psychology &behavior management	1			10
5	Dental care of Children with special health care needs & genetic disorders		1	1	7
6	Dental materials used in pediatric dentistry & ethics			1	2

SECTON- B

If LAQ from Cariology & Pediatric Operative Dentistry, the matrix is as follows					
SL NO	**Topic**	**LAQ (1x 10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35**
1	Cariology&Pediatric Operative dentistry & recent advances	1			10
2	Gingival & periodontal diseases in children		1	1	7
3	Preventive & interceptive orthodontics & oral habits		1	2	9
4	Traumatic injuries in children & pediatricEndodontics		1	1	7
5	Pediatric Oral Surgery, Local Anaesthesia & dental emergencies Commonly used drugs in Pediatric Dentistry Child abuse & neglect Practice management			1	2

If LAQ from Preventive & interceptive orthodontics & oral habits, the matrix is as follows					
SL NO	**Topic**	**LAQ (1x 10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35**
1	Cariology & Pediatric Operative dentistry & recent advances		1	2	9
2	Gingival & periodontal diseases		1		5
3	Preventive & interceptive orthodontics & oral habits	1			10

4	Traumatic injuries in children & pediatricEndodontics		1	2	9
5	Pediatric Oral Surgery, Local Anaesthesia & dental emergencies Analgesics & antimicrobials in Pediatric Dentistry Child abuse & neglect Practice management			1	2

If LAQ from traumatic injuries in children & PediatricEndodontics, the matrix is as follows					
SL NO	**Topic**	**LAQ (1x 10)**	**SAQ (3X5)**	**VSAQ (5X2)**	**35**
1	Cariology& Pediatric Operative dentistry & recent advances		1	2	9
2	Gingival & periodontal diseases		1		5
3	Preventive & interceptive orthodontics & oral habits		1	2	9
4	Traumatic injuries in children &pediatricEndodontics	1			10
5	Pediatric Oral Surgery, Local Anaesthesia & dental emergencies Analgesics & antimicrobials in Pediatric Dentistry Child abuse & neglect Practice management			1	2

(UNIVERSITY MODEL QUESTION PAPER)
IV BDS EXAMINATION
PEDODONTICS

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

Section – A

Long Answer Questions **(1 X 10 = 10 marks)**

1. Classify bleeding disorders in children. (4)
   Describe the dental consideration in the
a) Management of hemophiliac child. (3)
b) Management of child with cyanotic congenital heart disease. (3)

Short answer questions **(3 X 5 = 15 marks)**

1. Describe the Aversive conditioning technique.
2. Tabulate the self correcting anomalies that present during the different stages of development of occlusion and mechanisms by which they get corrected

3. Classify fissures and fissure sealants. List the indications and contraindications of pit and issure sealants.

Very short question and answers **(5 X 2 = 10 marks)**

1. Write four indications of Bitewing radiograph.
2. List the advantages and disadvantages of APF gel .
3. Define subjective and objective fear.
4. List the modifications of GIC
5. Give the diagrammatic representation of Leeway space of Nance.

Section B

Long Answer Questions **(1 X 10 = 10 marks)**

1. Define Early Childhood Caries.(2)

a) What is its etiology? (3)

b) Describe the types, its clinical features and management. (5)

Short answer questions **(3 X 5 = 15 marks)**

1. Describe the etiology, clinical features and management of primary herpetic gingivostomatitis.
2. Write the indications of Nance palatal arch appliance and its design.
3. List the indications and contraindications and describe the FormocresolPulpotomy technique

Very short question and answers **(5 X 2 = 10 marks)**

1. List the tests for mouth breathing.
2. List any four storage media for avulsed teeth.
3. List three clinical features of Papillon Le fevre Syndrome.
4. What is the point of insertion of the needle for inferior alveolar technique in a child below five years? What is the most common complication of Inferior alveolar nerve block in children?
5. List the contraindications for Distal Shoe Space Mainatiner.

Recommended books

1. Pediatric Dentistry (Infancy through Adolescences) – Pinkham.
2. Kennedy's Pediatric Operative Dentistry – Kennedy & Curzon.
3. Occlusal guidance in Pediatric Dentistry – Stephen H. Wei.
4. Clinical Use of Fluorides – Stephen H. Wei.
5. Pediatric Oral & Maxillofacial Surgery – Kaban.
6. Pediatric Medical Emergencies – P. S. whatt.
7. Understanding of Dental Caries – NikiForuk.
8. An Atlas of Glass Ionomer cements – G. J. Mount.
9. Clinical Pedodontics – Finn.
10. Textbook of Pediatric Dentistry – Braham Morris.
11. Primary Preventive Dentistry – Norman O. Harris.
12. Handbook of Clinical Pedodontics – Kenneth. D.
13. Preventive Dentistry – Forrester.
14. The Metabolism and Toxicity of Fluoride – Garry M. whitford.
15. Dentistry for the Child and Adolescence – Mc. Donald.
16. Pediatric Dentistry – Damle S. G.

17. Behaviour Management – Wright
18. Pediatric Dentistry – Mathewson.
19. Traumatic Injuries – andreason.
20. Occlusal guidance in Pediatric Dentistry – Nakata.
21. Pediatric Drug Therapy – Tomare
22. Contemporary Orhtodontics – Profitt.
23. Preventive Dentistry – Depaola.
24. Metabolism & Toxicity of Fluoride – whitford. G. M.
25. Endodontic Practice – Grossman.
26. Principles of Endodontics – Munford.
27. Endodontics – Ingle.
28. Pathways of Pulp – Cohen.
29. Management of Traumatized anterior Teeth – Hargreaves.
30. Essentials of Community & Preventive Dentistry – Soben Peters.

Conservative Dentistry and Endodontics

Number of hours prescribed by DCI				
Theory hours		Practicals hours		Total
III year BDS 30	**IV year BDS 80**	**III year BDS 70**	**IV year BDS 300**	**480**
Total : 110		**Total : 370**		

GOAL

To prevent and control carious and non-carious diseases and lesions

OBJECTIVES

KNOWLEDGE

The graduate should acquire the following knowledge during the period of training.

- To diagnose carious and non-carious lesions and treat with simple restorative work
- To gain knowledge about aesthetic restorative material and to translate the same to patient's needs.
- To gain the knowledge about endodontic treatment on the basis of scientific foundation.
- To carry out simple endodontic treatment.
- To diagnose and manage traumatic injuries and to provide emergency endodontic treatment

SKILLS

He should attain following skills necessary for practice of dentistry

- To use medium and high speed hand pieces to carry out restorative work.
- Possess the skills to use and familiarize endodontic instruments and materials needed for carrying out simple endodontic treatment.
- To achieve the skills to translate patients esthetic needs along with function.

ATTITUDES

- Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
- Willingness to participate in CDE program to update the knowledge and professional skill from time to time.
- To help and participate in the implementation of the national oral health policy.
- He should be able to motivate the patient for proper dental treatment at the same time proper maintenance of oral hygiene should be emphasize which will help to maintain the restorative work and prevent future damage.

COMPETENCIES

At the completion of the undergraduate training program the graduates shall be competent in the following:

1. Competent to diagnose all carious lesions
2. Competent to perform class I & II cavities and their restoration with amalgam

3. Restore class V & III cavities with glass ionomer cement
4. Able to diagnose and appropriately treat pulpally involved teeth
5. Able to perform RCT for anterior teeth
6. Competent to carry out small composite restoration
7. Understand the principles of aesthetic dental procedures

SYLLABUS III YEAR
Theory -30 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1.	Disinfection and sterilisation of operative armamentarium	3%	1	M
2.	Control of the field of operation	3%	1	M
3.	Instrument set-up	6.5%	2	M
4.	Anxiety and pain management	3%	1	N
5.	Occlusion considerations in Operative procedures	3%	1	N
6.	Examination, diagnosis and treatment plan	3%	1	M
7.	Clinical Cariology • Clinical presentation • Latest classification • Disease diagnosis—Caries risk assessment and Lesion detection	10%	3	M
8.	Non-operative treatment of dental caries • At the microbial level • At the dietary level • At the host level • Pit and fissure sealant procedure and sealant restoration procedure	10%	3	M
9.	Operative treatment of dental caries • Caries removal • Choice of restorative materials • Designing the cavity for various restorations • Silver amalgam restorations—simple, compound and complex • clinical approach • Bonded amalgam • complex amalgam • failures in amalgam • Mercury hygiene	13%	4	M

10.	Minimal Invasive Dentistry	6.5%	2	M
Endodontics				
1	Rationale and principles in endodontic therapy • Zones of inflammation • Kronfeld's mountain pass concept	6.5%	2	M
2	Pulpo–peri apical lesions • Classification • Clinical features • Definitive management	6.5%	2	M
3	Diagnosis and treatment plan in endodontics • Diagnosis • Diagnostic aids - Vitality tests, Radiographs • Treatment plan	6.5%	2	M
4	Endodontic armamentarium • Classification • Standardization • Sterilization	6.5%	2	M
5	Internal anatomy of pulp space • Apical tip anatomy • Dimensions of crown and roots • Canal configuration types	3%	1	D
6	Overview of endodontic treatment	6.5%	2	D

SYLLABUS IV YEAR
Theory -80 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
Conservative				
1	Disinfection and sterilisation of operative armamentarium	1.25%	1	M
2	Examination, diagnosis and treatment plan	2.5%	2	M
3	Clinical Cariology • Clinical presentation • Latest classification • Disease diagnosis—Caries risk assessment and Lesion detection	3.75%	3	M

4	Non-operative treatment of dental caries • At the microbial level • At the dietary level • At the host level • Pit and fissure sealant procedure and sealant restoration procedure	3.75%	3	M
5	Operative treatment of dental caries • Caries removal • Choice of restorative materials • Designing the cavity for various restorations Silver amalgam restorations—simple, compound and complex • clinical approach • Bonded amalgam • complex amalgam • failures in amalgam • Mercury hygiene Light cure composite restorations • clinical approach • material advancements • anterior restorations • posterior restoration • direct vs. indirect resin restoration • Fibre reinforced resin restorations. Glass ionomer restorations • Clinical approach • modified GIC Cast restorations • clinical approach • CAD-CAM Gold foil restorations • clinical approach	15%	12	M D D
6	Deep Caries management • Direct and indirect pulp capping – clinical approach, latest advancements in materials • Temporization and interim restorations • Pulpotomy – clinical approach	3.75%	3	M
7	Minimal Invasive Dentistry	1.25%	1	M
8	Non-carious disfigurement • Clinical presentation • Dentin hypersensitivity and management	5%	4	M
9	Aesthetic dentistry • Veneers • Bleaching	5%	4	D

Endodontics				
10	Rationale and principles in endodontic therapy • Zones of inflammation • Kronfeld's mountain pass concept	2.5%	2	M
11	Pulpo–peri apical lesions • Classification • Clinical features • Definitive management	3.75%	3	M
12	Diagnosis and treatment plan in endodontics • Diagnosis • Diagnostic aids—Vitality tests, Radiographs • Treatment plan	3.75%	3	M
13	Micro biology in endodontics	2.5%	2	D
14	Endodontic armamentarium • Classification • Standardization • Sterilization	2.5%	2	M
15	Pulpotomy and Apexification • Definition • Rationale • Materials • Clinical techniques	3.75%	3	M
16	Internal anatomy of pulp space • Apical tip anatomy • Dimensions of crown and roots • Canal configuration types	2.5%	2	D
17	Access preparation • Ratioanle • Instruments • Procedure	2.5%	2	M
18	Working length and width estimation • Rationale • Radiographic method • Apex locators	2.5%	2	M
19	Clean and shape • Rationle • Irrigation and irrigants • Canal shaping methods • Conventionall • Rotary endodontics	3.75%	3	M
20	Intra canal medication	2.5%	2	M

21	Obturation • Obturating and sealer materials • Obturating techniques	3.75%	3	M
22	Post endodontic restoration • Rationale • Custom cast post and prefabricated posts	2.5%	2	D
23	Failures in root canal therapy	3.75%	3	D
24.	Traumatic injuries and management	3.75%	3	M
25	Endodontic surgery • Indications and contra indications • Procedures	2.5%	2	D
26	Root resorption	3.75%	3	D
27	Endo-perio relationship	3.75%	3	D
28	Equipments and recent advances in materials in endodontics • Laser • Microscope assisted precision dentistry	2.5%	2	N

Clinicals : 200 hours

S.No	Clinical cases	How many	Perform	Assist/ Observe
	Caries risk assessment	10	Perform	
1	Silver amalgam restorations class I,II	30	Perform	
2	Glass ionomer restorations class I,II,III,V	10	Perform	
3	Composite resin restorations class IV, I, II, III, V	10	Perform	
4	Pit and fissure sealant and sealant restoration	10	Perform	
5	Pulp capping – direct and indirect	10	Perform	
6	Anterior root canal treatment	3	Perform	
7	Direct composite veneer			Assist/ Observe
8	Bleaching			Assist/ Observe
9	Periapical surgery			Assist/ Observe
10	Posterior RCT			Assist/ Observe
11	Post endodontic restoration			Assist/ Observe

12	Splinting			Assist/ Observe
13	Diastema closure			Assist/ Observe
14	Indirect resin inlays—DEMO			Assist/ Observe
15	P and NP inlays and onlays			Assist/ Observe

Integrated teaching syllabus

SL NO	Topic	Speciality integrating
1	Dental Caries, Pulp & Periapical Pathologies	Cons & Endo, Oral Pathology
2	Gingival overhang	Cons& Endo, Periodontics
3	Intrinsic and extrinsic disclouration	Cons& Endo, Periodontics
4	Tooth malformation	Cons& Endo, Ortho Oral Pathology
5	Local anaesthesia and pain control	Cons& Endo, Oral surgery
6	Diagnosis & treatment plan – pulpal and periapical pathology	Cons & endo, Oral pathology

Chair-side teaching syllabus

SL NO	Topics	Hours
1	Rubber dam application	1
2	Vitality test	1
3	Case history discussion	Half Hr
4	Instrument set up	1
5	Root canal sealer manipulation	Half Hr
6	Matrix band and retainer application	1
7	Demonstration of pit and fissure sealant ,fissurotomy and flowable composite application in patients	1

8	Step by step procedure of Anterior root canal therapy demonstration in natural tooth	3
9	Cariology Case history discussion	1
10	Patient communication skill	Half Hr
11	Pain management	Half Hr
12	Endodontic emergency management	1
13	Esthetic emergency management	1

Early Clinical Exposure

S.No	Topic	Number of hours	Must know/ Desirable to know/ Nice to know
1	Rubber dam isolation	10 Mins	M
2	Restoration – silver amalgam	1hr 30 min	M
3	Restoration – GIC	Half -Hour	M
4	Restoration – composite	1	M
5	Pit and fissure sealant	15 Mins	M
6	Preventive resin restoration	1	M
7	Root canal treatment- anterior	1	M
8	Pulp capping	30 min	M

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100
2. Clinical Examination: 90 marks
   Clinical Internal Assessment: 10 marks
   Total = 100 marks

Blue print of Clinical Examination

Case history& diagnosis: 15 mins/20 marks

Chief complaint, History of chief complaint, past dental history, Medical history, extra oral examination, Intra oral examination, Diagnosis, Treatment plan

One of the three Exercises allotted- class II silver amalgam, anterior LCR, Root Canal Therapy should be performed by the student during clinical examination

Steps	Class II silver amalgam	Anterior LCR	Root Canal Therapy
A/45 mins/30 marks	Cavity preparation for Class II	Caries removal, pumice prophylaxis, bevel, shade selection for anterior LCR	Caries removal, pre endodontic management, access cavity for RCT
B/ 15 mins/20 marks	Base, matrix and wedge for class II amalgam	Base, acid etching, matricing for composite restoration	Pre flaring and working length estimation for anterior RCT with the sheet
C /30 mins/20 marks	Silver amalgam restoration for class II and Post Op X-ray	Bonding, Light cure composite restoration for anterior , finishing and polishing and Post Op x ray	Cleaning and shaping with master cone X-ray with the sheet

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: Conservative Dentistry (35 marks)
Section B: Endodontics (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

The difficulty level will be distributed as
60% Easy
30% averagely difficult
10% very difficult

Blue print of question paper
Section A: Conservative Dentistry
(If the LAQ is from Aesthetic Restorative procedures/ Materials, the pattern is as follows)

SL NO	TOPICS	LAQ 1X10 = 10	SAQ 3X5 = 15	VSAQ 5X2 =10	Total 35
1	Diagnosis, treatment plan			2	4
2	Infection control, moisture control and pain control				

3	Operative Armamentarium and Occlusal considerations in Restorative Dentistry				
4	Dental Caries		1		5
5	Minimal Invasive Dentistry				
6	Aesthetic Restorative procedures/ Materials	1		1	12
7	Metallic Restorative procedures/ Materials		1	1	7
8	Non carious lesions/ Dentinal Hypersensitivity		1		5
9	Deep Caries Management			1	2

(If the LAQ is from Metallic Restorative procedures/ Materials, the pattern is as follows)

SL NO	TOPICS	LAQ 1X10 = 10	SAQ 3X5 = 15	VSAQ 5X2 =10	Total 35
1	Diagnosis, treatment plan		1	1	7
2	Infection control, moisture control and pain control				
3	Operative Armamentarium and Occlusal considerations in Restorative Dentistry				
4	Dental Caries			1	5
5	Minimal Invasive Dentistry				
6	Aesthetic Restorative procedures/ Materials		1	1	7
7	Metallic Restorative procedures/ Materials	1		1	12
8	Non carious lesions/ Dentinal Hypersensitivity		1		5
9	Deep Caries Management			1	2

(If the LAQ is from Non carious lesions/ Dentinal Hypersensitivity, the pattern is as follows)

SL NO	TOPICS	LAQ 1X10 = 10	SAQ 3X5 = 15	VSAQ 5X2 =10	Total 35
1	Diagnosis, treatment plan			2	4
2	Infection control, moisture control and pain control				
3	Operative Armamentarium and Occlusal considerations in Restorative Dentistry				
4	Dental Caries			1	2
5	Minimal Invasive Dentistry			1	2

6	Aesthetic Restorative procedures/ Materials		1		5
7	Metallic Restorative procedures/ Materials		1	1	7
8	Non carious lesions/ Dentinal Hypersensitivity	1			10
9	Deep Caries Management		1		5

(If the LAQ is from Dental Caries and Minimal Invasive Dentistry, the pattern is as follows)

SL NO	TOPICS	LAQ 1X10 = 10	SAQ 3X5 = 15	VSAQ 5X2 =10	Total 35
1	Diagnosis, treatment plan			2	4
2	Infection control, moisture control and pain control				
3	Operative Armamentarium and Occlusal considerations in Restorative Dentistry				
4	Dental Caries	1		1	12
5	Minimal Invasive Dentistry				
6	Aesthetic Restorative procedures/ Materials		1		5
7	Metallic Restorative procedures/ Materials		1	1	7
8	Non carious lesions/ Dentinal Hypersensitivity		1		5
9	Deep Caries Management			1	2

Section B: Endodontics
(If the LAQ is from Diagnosis and treatment plan, & Basics in Endodontics the pattern is as follows)

SL NO	TOPICS	LAQ 1X10 = 10	SAQ 3X5 = 15	VSAQ 5X2 =10	Total 35
1	Basics in Endodontics 1.Pulpo periapical pathoses 2. Pulpal anatomy 3. Microbiology of root canal	1		2	4
2	Diagnosis and treatment plan in Endodontics				10
3	Endodontic Instruments		1		5

4	Root canal Therapy 1.Rationale 2. Access 3. Clean and shape – materials and procedure 4. Intra canal medicaments 5. Obturation – materials and procedure 6. Failure in RCT		1	1	7
5	Special topics in endodontics 1. Post endodontic restoration 2. Surgical Endodontics 3. Traumatic Injuries 4. Retreatment 5. Endo Perio lesions 6. Root resoprtion		1	2	9

(If the LAQ is from Root canal therapy, the pattern is as follows)

SL NO	**TOPICS**	**LAQ 1X10 = 10**	**SAQ 3X5 = 15**	**VSAQ 5X2 =10**	**Total 35**
1	Basics in Endodontics 1.Pulpo periapical pathoses 2. Pulpal anatomy 3. Microbiology of root canal			2	4
2	Diagnosis and treatment plan in Endodontics		1		5
3	Endodontic Instruments		1	1	7
4	Root canal Therapy 1.Rationale 2. Access 3. Clean and shape – materials and procedure 4. Intra canal medicaments 5. Obturation – materials and procedure 6. Failure in RCT	1		1	12
5	Special topics in endodontics 1. Post endodontic restoration 2. Surgical Endodontics 3. Traumatic Injuries 4. Retreatment 5. Endo Perio lesions 6. Root resoprtion		1	1	7

(If the LAQ is from special topics, the pattern is as follows)

SL NO	TOPICS	LAQ 1X10 = 10	SAQ 3X5 = 15	VSAQ 5X2 =10	Total 35
1	Basics in Endodontics 1.Pulpo periapical pathoses 2. Pulpal anatomy 3. Microbiology of root canal		1		5
2	Diagnosis and treatment plan in Endodontics		1	1	7
3	Endodontic Instruments			2	4
4	Root canal Therapy 1.Rationale 2. Access 3. Clean and shape – materials and procedure 4. Intra canal medicaments 5. Obturation – materials and procedure 6. Failure in RCT		1	1	7
5	Special topics in endodontics 1. Post endodontic restoration 2. Surgical Endodontics 3. Traumatic Injuries 4. Retreatment 5. Endo Perio lesions 6. Root resoprtion	1		1	12

(UNIVERSITY MODEL QUESTION PAPER)

Time: 3hours **Marks: 70**

Section A: Conservative Dentistry

Long answer question **1x10=10 marks**

1. Define Dental caries. [2] Classify the carious lesions. [2] Enlist and explain the methods used to detect carious lesions. [6]

Short answer question **3x5=15 marks**

2. Explain the Hydrodynamic theory of dentinal hypersensitivity

3. Classify pins for complex restorations. [2] What are the indications and contraindications for pin amalgam restorations? [3]

4. Define and classify veneers. [2] What are the indications and contraindications for direct composite veneering? [3]

Very short answer question **2x5=10 marks**

5. What are the components of a Rubber dam kit?
6. What is infected and affected dentin?
7. Define an inlay and onlay.
8. Enlist the various forms in which fluoride is available?
9. What is the best method of sterilizing the hand cutting instruments?

Section B: Endodontics

Long answer question **1x10=10 marks**

10. Enumerate the diagnostic aids in endodontics. [5] Elaborate the pulp vitality tests. [5]

Short answer question **3x5=15 marks**

11. Classify endodontic instruments. [3] Explain the standardization of an endodontic file. [2]

12. Enumerate the cleaning and shaping methods. [3] Elaborate on the Sodium hypochlorite irrigant [2]

13. Define a post. [2] Compare the custom made post and prefabricated post. [3]

Very short answer question **2x5=10 marks**

14. Enumerate the pulpo periapical lesions
15. What is canal configuration in a type 4 configuration?
16. Enlist any three intra canal medicaments
17. Define hemisection and bicuspidization
18. Enumerate any two mediums where an avulsed tooth can be store.

Recommended books
Clinical Conservative Dentistry

SL NO	Books Name	Author Name
1	Sturtevant's Art and Science of operative Dentistry. 5th edition	Sturtevant's,TheodoreM Roberson
2	Pickard's Manual of Operative Dentistry .8th edition	E.A.M Kidd
3	Preservation and restoration of tooth structure -2ndedition	Graham J. Mount
4	Textbook of operative Dentistry	Baum, Lund and Phillips
5	Fundamentals of Operative Dentistry – A Contemporary approach.3rd edition	James B. Summit
6	Esthetic dentistry – 2nd edition	K.W.Aschheim and B.G. Dale

Clinical Endodontics

SL NO	Books Name	Author Name
1	Pathways of Pulp -10th edition	Stephen Cohen
2	Endodontics	John I.Ingle
3	Endodontic therapy- 4 th edition	F.S.Weine
4	Problem Solving in Endodontics -5th edition	James L. Gutman
5	Principle and practice of Endodontics -3rd	Walton and Torabinejad

PROSTHODONTICS AND CROWN & BRIDGE

Number of hours prescribed by DCI				
Theory hours		Clinical hours		Total
III year BDS 30	**IV year BDS 80**	**III year BDS 70**	**IV year BDS 300**	**480**
Total : 110		**Total : 370**		

GOAL

To train a dental graduate with adequate clinical knowledge, necessary skills and attitudes which are required for carrying out general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. To educate the students so that they can identify clinical situation requiring Removal and Fixed partial denture, Complete denture, Implant, maxillofacial prosthesis and to treat clinical situation requiring RPD and CD.

OBJECTIVES

The student should acquire the following during the period of training.

1. Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.
2. Adequate clinical experience required for general dental practice.
3. Adequate knowledge of biological function and behavior of persons in health and sickness as well as the influence of the natural and social environment on the state of health so far as it affects dentistry.
4. Acquire skill in making impression n and orher necessary steps involved in the fabrication of RPD CD followed by corresponding lab works.
5. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
6. Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
7. To help and to participate in the implementation of national health

COMPETENCIES

At the completion of the undergraduate training program the graduates shall be competent in the following:

1. Able to understand and use various dental materials
2. Competent to carry out treatment of conventional complete and partial removable dentures and fabricate fixed partial dentures
3. Able to carry out treatment of routine prosthodontic procedures
4. Familiar with the concept of osseointegration and the value of implant supported prosthodontic procedures

SYLLABUS III YEAR
Theory - 30 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1	Introduction to RPD, classification, Apple gate rules	7%	2	D,M
2	Major connector, minor connector, direct retainer, indirect retainer, rests and rest seats, denture base and teeth	26%	8	M,D
3.	Principles of RPD design, stress distribution and equalization	7%	2	M
4.	Surveyor and surveying	10%	3	M
5.	Mouth preparation	7%	2	M
6.	Laboratory procedure in RPD construction	7%	2	D
7.	Combination syndrome	3%	1	M,D,N
8.	RPI,RPA clasps	3%	1	M,D
9.	Special impression procedures in distal extension RPD	3%	1	M,D
10.	Single complete denture opposing natural dentition	3%	1	M
11.	Other forms of RPD	3%	1	D
12.	Removable partial denture for MFP	3%	1	D,M
13.	Attachments for RPDs	3%	1	M,D,N
14.	Principles of tooth preparation	7%	2	M
15.	All ceramic, metal ceramic and All metal preparation	7%	2	D,M

Clinicals = 70 hours

S.No	Clinical cases	How many	Perform	Assist/ Observe
1	Removable partial denture	5	5	-

Chair-side teaching syllabus

S.No	Topics	Hours
1	Surveying with instrument	1
2	Fabrication of acrylic RPD with surveyor and concept of block outs	1
3	All ceramic and Metal Ceramic Tooth preparation	1

Pre clinical works

S.No	Topics	Hours
1	All ceramic Incisor tooth prep [plaster model]	4
2	All metal Molar tooth prep [plaster model]	4
3	Metal ceramic tooth prep [natural teeth]	4
4	Three quarter crown [natural teeth]	4
5	Complete veneer crown [natural teeth]	4
6	Rebasing and Repair of complete denture	6

SYLLABUS IV YEAR
Theory – 80 hours

S.No	Topic	System weightage	Number of hours	Must know (M)/ Desirable to know (D)/ Nice to know (N)
1	**Complete denture and Removable partial denture [Section A]**			
2	Biomechanics of edentulous state Mastication and Deglutition Difference between denture patients and patients with natural dentition Oral Mucosa under dentures	1.25%	1	D M D
3	Mandibular Movements in three planes and three axis Bennet movement, bennet angle, fischers angle Working and balancing condyle and movements	2.5%	2	M D M
4	Age changes in the elderly, bone, soft tissue, muscles, salivary changes	1.25%	1	M
5	Denture wearer and the sequelae in wearing faulty dentures including denture stomatitis	1.25%	1	M

6	Diagnosis and treatment planning for patients for complete dentures including few teeth remaining	2.5%	2	M
7	Diagnosis and treatment planning for patients for complete dentures with all teeth missing	2.05%	2	M
8	Nutrition, care and counseling and understanding Mental attitude of denture patients.	1.25%	1	D D
9	Jaw relations – Classification Orientation relation and face bows Kinematic axis face bow vertical jaw relation and methods, increased and decreased vertical dimension, centric relation, importance to record, methods to develop centric occlusion.	5%	4	M D N M M M D
10	Balanced occlusion- Definition, factors, need, interplay of factors	2.5%	2	M M D
11	Articulators – General principles, purposes, uses and limitations	2.5%	2	M
12	Semi adjustable articulators – Hanau and Whipmix	1.25%	1	D
13	Selection of anterior teeth including dentogenic concept	1.25%	1	M
14	Posterior tooth forms, Try in procedure Neutral zone Neutrocentric concept Compensating curves	2.5%	2	D N N N M
15	Overdentures, Immediate Dentures Single complete denture Combination syndrome	3.75%	3	D D M
16	Classification of Implants Materials used for implants Osseointegration Types of prosthesis on implants	1.25%	1	M D M N
17	Gagging and management	1.25%	1	M
18	Relining, Rebasing, Selective grinding	2.5%	2	D M
19	Impression making, Impression trays and Impression materials Anatomical landmarks, Definition, Clinical significance and applied and related anatomy	3.75%	1	M M

20	Introduction and classification of RPD	1.25%	1	M
21	Components of RPD Major , Minor connectors, Direct and Indirect retainers, Rests and rest seats Denture base and teeth	5%	4	M D
22	Parts of surveyor Concept of undercuts, survey lines, block outs Surveying concept and uses and usage Philosophy of rpd design Tripoding	6.25%	5	M M D D D
23	Mouth preparation Principles of RPD design	2.05%	4	D D
24	Other forms of RPD, RPI and RPA	5%	4	D
2	**FPD and Implants and Maxillofacial prosthesis [Section B]**			
25	Principles of tooth preparation	2.5%	2	M
26	Pontics,General classification, indications Prefabricated pontics	1.25%	1	M D
27	Fluid Control and soft tissue management	1.25%	1	M
28	Impressionmaking in FPD Provisionalisation Ideal requirements/importance of a provisional restoration Techniques of provisionalisation Materials for provisionalisation	2.5%	2	M M D D
29	Die and Die lock trays	1.25%	1	N
30	Laboratory procedures, Occlusal Waxing Occlusion in FPD	2.5%	2	D N M
31	Luting Agents in FPD types Desirable properties of luting agents Luting agents choice in restorations and techniques of cementation	.25%	1	M D D
32	Rigid and Non Rigid connectors	1.25%	1	N
33	Laboratory procedures in RPD	1.25%	1	N
34	Management of endodontically treated Periodontally compromised teeth	3.75%	2	N N

35	Individual tooth preparations - metal ceramic, all ceramic and all metal preparation and partial veneer preparations	2.5%	2	M
36	Other preparations including post and core preparation,	2.5%	2	D
37	Obturators Palatal and maxillary defects classification Eye nose and auricular prosthesis	3.75%	1	M N N
38	Treatment planning for single complete denture	2.5%	2	D
39	Resin bonded FPD – indications, types Preparation designs	1.25%	1	M D
40	Resin bonded FPD – indications, types Preparation designs Esthetic consideration in FPD	1.25%	1	D
41	Attachments for removable partial denture – Indications and types	1.25%	1	N
42	Implants in Prosthodontics	8.15%	5	M
43	Class Test & Revision	-	3	

Clinicals

S.No	Clinical cases	How many	Perform	Assist/ Observe
1	Acrylic RPD	10	Perform	
2	Complete denture	2	Perform	
3	Fpd tooth preparation and impression			Assist/ Observe
4	Dental implants			Assist/ Observe
5	Maxillofacial prosthesis			Assist/ Observe
6	Cast RPD- Diagnosis, Designing,Insertion			Assist/ Observe

Integrated teaching syllabus (to include topics that are common with different specialities)

S.No	Topics	Speciality Integrating
1	Post endodontic restoration	Prost/cons
2	Laminate and veneers	Prost/cons

3	Periodontal considerations in FPD	Prost/perio
4	Mouth preparation in RPD and CD- alveoloplasty	Prost/oral sur

Clinicals

S.No	Topics	Speciality Integrating
1	Diagnosis and treatment planning	1
2	Impression theories and techniques of primary and border moulding	1
3	Jaw relation – orientation [facebow], vertical and horizontal	1
4	Try in and delivery including post insertion adjustments	1

Early Clinical Exposure

Integrated Posting syllabus			
S.No	**Topic**	**Number of hours**	**Must know/ Desirable to know/ Nice to know**
1	Observing taking of case history and treatment plannning	1	M
2	Observing impression making	1	M
3	Observing bite registration	1	M
4	Observing try-in procedure	1	M
5	Observing denture delivery	1	M
6	Observing post insertion check up	1	M
7	Observing tooth preparation procedure	1	M
8	Observing placement of retraction cord	1	M
9	Observing impression making in FPD	1	M
	Observing insertion of metal ceramic prosthesis	1	M

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Clinical Examination: 90 marks
   Case presentation with indices: 50 marks
   Preventive procedures: 25 marks
   Stage viva: 15 marks

Clinical Internal Assessment: 10 marks
Total = 100 marks

Blue print of Clinical Examination

Case history& diagnosis: 15 mins/15 marks
BORDER MOULDING PROCEDURE- I HOUR/ 40 MARKS
FINAL IMPRESSION – 15MIN/ 35 MARKS
ORAL VIVA VOICE- 20 MARKS
INTERNAL MARKS- 10 MARKS

Blue print of the question paper

The paper shall consist of two sections as follows:
Section A: PART –I (rpd, implant and cd) (35 marks)
Section B: PART- II (fpd, maxillofacial prosthesis and cd) (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

Blue print of question paper

Model 1

If LAQ is asked from Impression materials or anatomical landmarks then the pattern is as follows

SL NO	TOPICS	LAQ [1X10]	SAQ [3X5]	VSAQ [5X2]	35 MARKS
1	Biomechanics of edentulous state, Age changes in the elderly, Nutrition for the the geriatric			1	2
2	Impression making in dentures including macroscopic and microscopic landmarks Components of RPD Priniciples of designing RPD Surveyor and surveying	1		2	14
3	Jaw relation procedure, the biological considerations, articulators		1		5

4	Selection of teeth, teeth arrangement, balanced occlusion and other Occlusal schemes for dentures		1		5
5	Try in, delivery and postinsertion adjustments			1	2
6	Immediate dentures, overdentures, implant prosthodontics		1		5
7	Mouth Preparation special impression procedures and laboratory procedures			1	2
SECTION B [FIXED PARTIAL DENTURE AND IMPLANT PROSTHODONTICS, MAXILLOFACIAL PROSTHODONTICS] If one LAQ is from Principles of tooth preparation or Pontics then the pattern is as follows					
8	Principles of tooth preparation Pontics	1		1	12
9	Individual crown preparations and types of retainers, provisional restorations		1		5
10	Laboratory procedures, dies and casting			1	2
11	Isolation, gingival retraction, Impression making and occlusion		1		5
12	Luting agents, connectors and retainers			1	2
13	Implants		1		5
14	Maxillofacial Prosthodontics			1	2
15	Resin bonded bridges, Special abutments and preparations in compromised teeth			1	2

Model 2

SECTION A [COMPLETE DENTURE AND REMOVABLE PARTIAL DENTURE] If one LAQ is from Jaw Relations or Articulators then thepattern is as follows					
SL NO	**TOPICS**	**LAQ [1X10]**	**SAQ [3X5]**	**VSAQ [5X2]**	**35 MARKS**
1	Biomechanics of edentulous state, Age changes in the elderly, Nutrition for the the geriatric			1	2
2	Impression making in dentures including macroscopic and microscopic landmarks Components of RPD Priniciples of designing RPD Surveyor and surveying		1	2	9

3	Jaw relation procedure, the biological considerations, articulators	1			10
4	Selection of teeth, teeth arrangement, balanced occlusion and other Occlusal schemes for dentures		1		5
5	Try in, delivery and postinsertion adjustments			1	2
6	Immediate dentures, overdentures, implant prosthodontics		1		5
7	Mouth Preparation special impression procedures and laboratory procedures			1	2
SECTION B [FIXED PARTIAL DENTURE AND IMPLANT PROSTHODONTICS] If one LAQ is from Principles of tooth preparation or Pontics then the pattern is as follows					
8	Principles of tooth preparation Pontics	1		1	12
9	Individual crown preparations and types of retainers, provisional restorations		1		5
10	Laboratory procedures, dies and casting			1	2
11	Isolation, gingival retraction, Impression making and occlusion		1		5
12	Luting agents, connectors and retainers			1	2
13	Implants		1		5
14	Maxillofacial Prosthodontics			1	2
15	Resin bonded bridges, Special abutments and preparations in compromised teeth			1	2

Department of Prosthodontics and Crown & Bridge and Implantology, IGIDS

Question Paper for Final year

Internal Exam (Regular Batch)

TIME : 3 Hours **70 MARKS**

Section A

Long Answer Question **1 X 10 = 10**

1. Define centric relation (2) classify methods of centric relation (1) Explain in detail about method of recording centric relation by extra oral graphic method (7)

Short Answer Question **3 X 5 = 15**

2. List out the indication and contraindication of facebow transfer
3. Write applegate rules sequentially
4. Effect of increased vertical dimension.

Very Short Answer Question **5 X 2 = 10**

1. List the materials used to fabricate denture base resins
2. Significance of border molding
3. Significance of retromolar pad
4. Primary stress bearing in maxilla and mandible
5. Define balanced occlusion

Department of Prosthodontics and Crown & Bridge and Implantology, IGIDS

Question Paper for Final year

Internal Exam (Regular Batch)

TIME : 3 Hours **70 MARKS**

Section -B

Long Answer Question **1 X 10 = 10**

1. Define impression(2)Classify methods of recording impression for complete denture(2)list out the objectives impression making(1) Explain in detail about factors affecting retention and stability(5

Short Answer Question **3 X 5 = 15**

2. Define rest and write in detail about occlusal rest

3. Classify special impression procedure for RPD and write in detail about method of recording impression by fluid wax technique.

4. Define major connector and explain lingual plate in detail with diagram

Very Short Answer Question **5 X 2 = 10**

1. Define indirect retainer
2. Why there is no modification for Kennedy's class IV edentulous space
3. List any three significance of terminal hinge axis

4. Reason for preferring cast partial denture to acrylic denture
5. Function of post palatal seal

Recommended books

Book	Author	Edition	Publications	Address	Year
Prosthodotnic treatment for edentulous patients	Zarb, Bolender and Carlson	Thirteen	Mosby	CV Mosby, USA	2012
Essentials of complete denture Prosthodontics	Sheldon Winkler	Second	Saunders	WBSaunders Co, Philadelphia	1979
Laboratory procedures for complete dentures	Rudd Morrow	Second	Mosby	CV Mosby, USA	1986
Syllabus of complete dentures	Charles M Heartwell	Fourth	Lea Febiger	Philadelphia USA	
Fundamentals of tooth preparation	Herbert T Shillingburg		Quintessence	Quintessence Publishing company	1986
Removable partial Prosthodontics	Kenneth Stewart	Fourth	Quintessence	Quintessence Publishing company	2008

Early Clinical Exposure

Integrated Posting syllabus			
S.No	**Topic**	**Number of hours**	**Must know/ Desirable to know/ Nice to know**
1	Observing taking of case history and treatment plannning	1	M
2	Observing impression making	1	M
3	Observing bite registration	1	M
4	Observing try-in procedure	1	M
5	Observing denture delivery	1	M
6	Observing post insertion check up	1	M

7	Observing tooth preparation procedure	1	M
8	Observing placement of retraction cord	1	M
9	Observing impression making in FPD	1	M
10.	Observing insertion of metal ceramic prosthesis	1	M

ORTHODONTICS & DENTAL ORTHOPAEDICS

Number of hours prescribed by DCI			
Theory hours	Clinical hours		Total
IV year BDS 50	**III year BDS 70**	**IV year BDS 130**	**250**
Total : 50	**Total : 200**		

GOAL

To prevent and control malocclusion and promote feasible facial profile through organized orthodontic procedures.

OBJECTIVES
KNOWLEDGE

Undergraduate programme in Orthodontics is designed to enable the qualifying dental surgeon to diagnose, analyse and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures.

SKILL

- To obtain proper clinical history, examination of the patient, and interpretation of the data to arrive at a diagnosis about different types of malocclusion and to render appropriate treatment.
- To perform wire bending exercises and fabrication of appliances.

ATTITUDE

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a malocclusion and obtain a true informed consent from them for the most appropriate treatment.
- Develop the ability to communicate with professional colleagues.

The following basic instructional procedures will be adapted to achieve the above objectives.

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following:

SYLLABUS IV YEAR
Clinical: No. of hours = 70

SL NO	Clinical	Observe/ assist/ perform
1.	Basic wire bending exercise (includes straightening of wire 3'', fabrication of square 1'', rectangle 2''x 1'', triangle 1"x1"x1", circle 1" radius, 3U loops, 3V loops, 5 UV loops with stainless steel wire)	Observe/ Perform
2.	Fabrication of clasps (fabrication of 5 important clasps – circumferential clasp, Jackson's crib, Traingular clasp, Adam's clasp, Modified Adam's clasp)	Observe/ Perform
3.	Fabrication of labial bows (Fabrication of different types of labial bows – Short labial bow, Long labial bow, split labial bow, Robert's retractor, High labial bow)	Observe/ Perform

SYLLABUSIV YEAR
Theory: no: of hours = 50

IV BDS				
S.No	**Topic**	**System weightage**	**Number of hours**	**Must know (M)/ Desirable to know (D)/ Nice to know (N)**
1	Growth and development	12 %	6	M
2	Occlusion and malocclusion	8%	4	M
3	Diagnostic aids	12%	6	M
4	Biology of tooth movement and Anchorage	8%	4	M
5	Removable appliances	8%	4	M
6	Arch Expansion	2%	1	M
7	Preventive, Interceptive and Habits	8%	4	M
8	Retention and Relapse	6%	3	M
9	Myo Functional Appliances	8%	4	D
10	Orthopaedic appliances	4%	2	D
11	Mechanics of tooth movement	2%	1	D
12	Corrective Orthodontics	8%	4	D
13	Cleft lip and palate	4%	2	D
14	Implants	2%	1	N
15	Genetics	2%	1	N
16	Surgical Orthodontics	2%	1	N
17	Fixed appliances	2%	1	N
18	Arch wires	2%	1	N

Clinical: No. of hours = 130 hrs

SL NO	Clinical	Observe/ assist/ perform
1.	Fabrication of springs (Fabrication of Finger spring, Single Cantilever spring, Double cantilever spring, U loop canine retractor, Helical canine retractor, Buccalcanine retractor, Palatal canine retractor, Coffin spring, Spring for lingual movement of premolar, T. spring)	**Observe/ Perform**

2	Fabrication of appliances (wire bending of the components of the appliances and acrylisation, finishing and polishing of the following appliances – Hawley's appliance, Hawley's appliance with tongue spike, ,Hawley's appliance with double cantilever spring , Oral screen, Catalan's appliance)	**Observe/** Perform
3	Case History Recording for 1 clinical case	Assist
4.	Case History Recording for 4 clinical cases	Perform
4	Preparation of study model	Observe/ perform
5	Model analysis	Observe/ perform

Integrated teaching syllabus (to include topics that are common with different specialities)

SL NO	Topics	Speciality Integrating
1.	Growth and development	Pedodontics
2.	Occlusion	Prosthodontics, Pedodontics
3.	Removable appliances	Pedodontics
4.	Arch Expansion	Pedodontics
5.	Habits	Pedodontics
6.	Diagnostic aids	Oral medicine
7.	MyoFunctional Appliances	Pedodontics
8.	Orthopaedic appliances	Pedodontics
9.	Cleft lip and palate	Prosthodontics, Pedodontics, oral surgery
10.	Adult Orthodontics	Periodontics
11.	Surgical Orthodontics	Oral surgery

Chair-side teaching syllabus

SL NO	Topics	Speciality Integrating
1.	Demonstration of Case History Taking , General Examination, Extra Oral and intra-oral Examination.	3 Hrs
2.	Demonstration of wire bending exercises	2 Hrs

3.	Demonstration of study model preparation	1 hr
4.	Demonstration of model analysis	2 hrs

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks
   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100
2. Clinical Examination: 90 marks
   Case presentation with indices: 50 marks
   Preventive procedures: 25 marks
   Stage viva: 15 marks
   Clinical Internal Assessment: 10 marks
   Total = 100 marks

Blue print of Clinical Examination
Session 1:

The Candidate will be expected to take Detailed Case History of a given patient, arriving at a Clinical Diagnosis and treatment plan. (Duration 45 Mins)

Identification of Spotters. (Duration 20 Mins)
Wire Bending - Fabrication of clasp/spring and labial bow. (Duration 30 min.)

Case History and Clinical Diagnosis/ Chair side Case Discussion – 30 Marks

Treatment Plan – 10 Marks
Spotters – 20 marks
Wire bending – 30 marks

Session 2:

Theory Viva- Voce duration not exceeding 20 Mins per Candidate
Clinical Internal Assessment: 10 marks;
Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:
Section A: Basic concepts of growth and development and diagnosis (35 marks)
Section B: Treatment planning and mechanics (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

SECTION A:
BASIC CONCEPTS OF GROWTH AND DEVELOPMENT AND DIAGOSIS

MATRIX 1 :
If LAQ is from general principles of growth and development, facial structures, dentition and occlusion, functional development the matrix is as follows:

SL NO	TOPICS	LAQ	SAQ	VSAQ	35 MARKS
1	General principles of growth and development, facial structures, dentition and occlusion,functional development	1			10
2	Occlusion, Classification of malocclusion		1	1	7
3	Biology of tooth movement, Anchorage		1	1	7
4	Orthodontic diagnosis, Cephalometrics, Model Analysis, Skeletal Maturity indicators			2	4
5	Habits		1	1	7

MATRIX 2
If LAQ is from biology of tooth movement, anchorage the matrix is as follows:

SL NO	TOPICS	LAQ	SAQ	VSAQ	35 MARKS
1	General principles of growth and development, facial structures, dentition and occlusion,functional development		1	1	7
2	Occlusion, Classification of malocclusion		1		5
3	Biology of tooth movement, Anchorage	1		1	12
4	Orthodontic diagnosis, Cephalometrics, Model Analysis, Skeletal Maturity indicators		1	1	7
5	Habits			2	4

SECTION B

SL NO	TOPICS	LAQ	SAQ	VSAQ	35 MARKS
1	Preventive,Interceptive orthodontics			2	4
2	Arch expansion			1	2
3	Orthodontic appliances – Removable, Fixed			1	2
4	Myofunctional and Orthopedic Appliances			1	2

TREATMENT PLANNING AND MECHANICS

MATRIX 1

If LAQ is from Preventive and Interceptive Orthodontics the matrix is as follows:

SL NO	TOPICS	LAQ	SAQ	VSAQ	35 MARKS
1	Preventive,Interceptive orthodontics	1			10
2	Arch expansion		1		5
3	Orthodontic appliances – Removable, Fixed		1		5
4	Myofunctional and Orthopedic Appliances			2	4
5	Retention & Relapse		1		5
6	Cleft lip & Palate			1	2
7	Management of open bite,Deep bite, Cross bite			1	2
8	Surgical orthodontics			1	2

MATRIX 2

If LAQ is from Retention and relapse the matrix is as follows:

SL NO	TOPICS	LAQ	SAQ	VSAQ	35 MARKS
5	Retention & Relapse	1			10
6	Cleft lip & Palate		1		5
7	Management of open bite, Deep bite, Cross bite		1		5
8	Surgical orthodontics		1		5

ORTHODONTICS
(UNIVERSITY MODEL QUESTION PAPER)
IV BDS EXAMINATION

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

SECTION A

LONG ANSWER QUESTION : **1x10 = 10 marks**

1. Name the different theories of growth. (3 marks)
   Define functional matrix theory. (2 marks)
   Explain Functional matrix hypothesis in detail. (5 marks)

SHORT ANSWER QUESTIONS: **3x5 = 15 marks**

1. Classification of anchorage
2. Angle's classification of malocclusion
3. Clinical phases of thumb sucking.

VERY SHORT ANSWER QUESTIONS: **5x2 = 10 marks**

1. Name the different types of tooth movement.
2. Name Andrews six keys of occlusion
3. Draw labeled diagram of Compensatory curves
4. Inference of Ashley Howe analysis
5. Dunlops Beta Hypothesis

SECTION B

LONG ANSWER QUESTION: **1x10 = 10 marks**

1. Define Serial Extraction. (2 marks)
   Write the indications, contraindications for serial extraction. (3 marks)
   Explain Tweeds method for serial extraction. (5 marks)

SHORT ANSWER QUESTIONS: **3x5 = 15 marks**

1. Difference between slow and rapid maxillary expansion.
2. Mention the theories of retention.
3. Discuss the design and construction of Adams Clasp.

VERY SHORT ANSWER QUESTIONS: **5x2 = 10 marks**

1. Name the problems associated with Clefts
2. Frankel II components – Name them
3. Write in brief about the occlusal inclined planes of twin block.
4. Define open bite, deep bite and cross bite.
5. Name the surgical treatment for mandibular retrognathism.

Recommended books

1. Contemporary orthodontics. William R. Proffit.5TH edition. Mosby
2. Orthodontics for dental students. White and Gardiner
3. Handbook of orthodontics. Moyers
4. Orthodontics –Current principles and technique. Graber, Vanarsdal. 4th edition. Elsevier.
5. Design, construction and use of removable Orthodontic appliances. C. Philip Adams. 6th edition. Varghese.
6. Clinical orthodontics: vol1 & 2 Salzmann
7. Textbook of Orthodontics. Gowri Shankar. 1st edition. Parus.
8. Principles and practice. BasavarajSubashchandra. Jaypee.
9. Orthodontic materials. William Brantley. Thieme

Early Clinical Exposure

S.No	Topic	Number of hours	Must know/ Desirable to know/ Nice to know
1.	Introduction to Orthodontic materials	1	D
2.	Introduction to the concepts of orthodontic principles	1	D
3.	Introduction to the concepts of removable appliances	1	D
4.	Display of different orthodontic appliances	1	D

PUBLIC HEALTH DENTISTRY

Number of hours prescribed by DCI		
Theory hours	Clinical hours	Total
IV year BDS 60	**III year BDS 70 Hours IV year BDS 130 Hours**	**260**
Total : 60	**Total : 200**	

GOAL

To prevent and control oral diseases and promote oral health through organized community efforts

OBJECTIVES

KNOWLEDGE

At the conclusion of the course the student shall have a knowledge of the basis of public health, preventive dentistry, public health problems in India, Nutrition, Environment and their role in health, basics of dental statistics, epidemiological methods, National oral health policy with emphasis on oral health policy.

SKILL AND ATTITUDE

At the conclusion of the course the students shall have require at the skill of identifying health problems affecting the society, conducting health surveys, conducting health education classes and deciding health strategies. Students should develop a positive attitude towards the problems of the society and must take responsibilities in providing health.

COMMUNICATION ABILITY

At the conclusion of the course the student should be able to communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease

COMPETENCIES

At the completion of the undergraduate training programme the graduates shall be competent in the following:

1. Apply the principles of health promotion and disease prevention
2. Have knowledge of the organization and provision of health care in community and in the hospital service
3. Have knowledge of the prevalence of common dental conditions in India
4. Have knowledge of community based preventive measures
5. Have knowledge of the social, cultural and environmental Factors which contribute to health or illness
6. Administer and hygiene instructions, topical fluoride therapy and fissure sealing
7. Educate patients concerning the etiology and prevention of oral disease and encourage them to assure responsibility for their oral health.

SYLLABUS IV YEAR
Theory- 60 hours

FINAL BDS – PUBLIC HEALTH				
S.No	**Topic**	**System weightage**	**Number of hours**	**Must know (M)/ Desirable to know (D)/ Nice to know (N)**
1.	Concept of Health	3.3%	2	M
2.	Concept of Diseases	1.6%	1	M
3.	Concept of Prevention	1.6%	1	M
4.	Public Health in India	3.3%	2	N
5.	International Public Health	1.6%	1	N
6.	General Epidemiology- Introduction	3.3%	2	M
7.	Basic Measurements of Epidemiology	3.3%	2	M
8.	Epidemiological Methods - Descriptive, Analytical, Experimental	5%	3	M
9.	Planning & Evaluation	3.3%	2	M
10.	Sampling	1.6%	1	N
11.	Bio-statistics	1.6%	1	D
12.	Bias	1.6%	1	D
13.	Health Education	6.6%	4	M
14.	Environment & Health – Introduction	1.6%	1	M
15.	Water Purification & Sewage Treatment	5%	3	N
16.	Waste Disposal	3.3%	2	N
PUBLIC HEALTH DENTISTRY				
17.	Oral Health Survey	5%	3	M
18.	Indices in Dental Diseases O.H.I, O.H.I-S, Plaque, Gingival, D.M.F.T, D.M.F.S, Russell's, C.P.I.T.N, Dean's	5%	3	M
19.	Epidemiology & Aetiology of Dental Caries, Periodontal Diseases & Oral Cancer	6.6%	4	M
20.	Dental Practice Management	3.3%	2	N

21.	Dental Manpower	3.3%	2	M
22.	Ethics in Dental Practice	1.6%	1	M
23.	Payment in Dental Care	1.6%	1	D
24.	School Health Program and Dental Public Health Program	6.6%	4	D
25.	D.C.I & I.D.A	1.6%	1	N
PREVENTIVE DENTISTRY				
26.	Prevention of Dental Caries, Periodontal Disease, Oral cancer, Malocclusion	6.6%	4	M
27.	Caries Activity Test	1.6%	1	D
28.	Dental Caries Vaccine	1.6%	1	N
29.	Pit & Fissure Sealants	1.6%	1	M
30.	A.R.T	1.6%	1	M
31.	Fluorides in Dentistry	11.6%	7	M
32.	Minimum Invasive Dentistry	1.6%	1	N
SOCIAL SCIENCES				
33.	Social & Behavioural Sciences	1.6%	1	N
34.	Concept of Sociology	1.6%	1	N
35.	Psychology Child & Adult	1.6%	1	N
36.	Cultural Factors in Health & Diseases	1.6%	1	N

Clinicals: - 200 hours

SL NO	Clinical cases	Observe/Assist/Perform
1.	Case History – 2 cases	**Observe**
2.	Case history – 3 cases	**Assist**
3.	Case History- 7 cases	**Perform**
4.	Indices – 1 case each	**Observe**
5.	Indices – 21 cases	**Perform**
6.	Pit and Fissure sealant application- 1 case	**Observe/Assist**
7.	Pit and fissure sealant application- cases	**Perform**
8.	Topical fluoride application- 1 case	**Observe**
9.	Topical fluoride application- 2 cases	**Perform**
10.	Atraumatic Restorative Treatment – 1 case	**Observe/Assist**

11.	Atraumatic Restorative Treatment – 1 case	**Perform**
12.	Oral screening camp – 3, Oral health education talk	**Observe/Assist**
13.	Outreach activities- Treatment camps Oral prophylaxis – 20 cases	**Perform**

IV Year - Integrated teaching syllabus (to include topics that are common with different specialities)

S.No	Topic	Speciality integrating
1	Dental caries – Prevention	Cons & Endo
2	Plaque control , prevention of periodontal diseases	Periodontics
3	Oral cancer screening and prevention	Oral medicine, oral pathology
4	Child psychology & behavioral sciences	Pedodontics and preventive dentistry
5	Fluorides application	Pedodontics and preventive dentistry

Early Clinical Exposure - II Year

S.No	Topic/ Activity	Observe/Assist/Perform
1	Oral screening camp	Observe
2	Rally/ Streetplay activity	Assist/Perform
3	Case history	Observe
4	Prevention of oral diseases and importance of health education	Observe
5	Information, communication and technology application and uses in health education	Observe and assist
6	Health programs – General and oral health	Observe and assist

Environmental Sciences as per UGC

UNIT	TOPICS	SYSTEM WEIGHTAGE
UNIT 1 Multidisciplinary nature of environmental studies I year	Definition, scope and importance, need for public awareness	5 % (five)
UNIT 2 Natural Resources I year	• Forest, Water, food and land resources • Sustainable development	15 % (fifteen)

UNIT 3 Ecosystems II year	• Concept of ecosystem • Structure and function of an ecosystem • Producers, consumers and decomposers • Energy flow in the ecosystem • Ecological succession • Food chains, food webs and ecological pyramids • Introduction, types, characteristic features, structure and function of the following systems a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)	10 % (ten)
UNIT 4 Biodiversity and its conservation I year	• Introduction – Definition : genetic, species and ecosystem diversity • Bio geographical classification of India • Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values • Biodiversity at global, national and local levels • India as a mega-diversity nation • Hot-spots of Biodiversity • Threats to biodiversity: habitat loss, poaching of wild life, man-wildlife conflicts • Endangered, endemic species of India • Conservation of biodiversity: In-situ and Ex-situ	15 % (fifteen)
UNIT 5 Environmental pollution II year	• Definition • Cause, effects and control measures: a. Air pollution b. Water pollution (sources, water, purification) c. Soil pollution d. Noise pollution e. Thermal pollution f. Nuclear hazards • Solid waste management : Causes, effects and control measures of urban and industrial wastes • Role of an individual in prevention of pollution • Pollution case studies • Disaster management: floods, earthquake, cyclone and landslides	20% (twenty)

UNIT 6 Social issues and the environment II year	Environment protection act • Air (Prevention and control of pollution) Act • Water (Prevention and control of pollution) Act • Public awareness	5 % (five)
UNIT 7 Human population and the environment II year	• HIV & AIDS	5 %(five)
UNIT 8 Field Work IIyear	Field visit • Visit to biomedical waste management plant • Visit to water purification plant • Visit to sewage treatment plant	25% (twenty five)

Scheme of examination

1. Theory Exams: 70 marks
   Section A: 35 marks
   Section B: 35 marks

   Internal assessment: 10 marks
   Viva voce: 20 marks
   Total = 100

2. Clinical Examination: 90 marks

   Case presentation with indices: 50 marks
   Preventive procedures: 25 marks
   Stage viva: 15 marks

   Clinical Internal Assessment: 10 marks
   Total = 100 marks

Blue print of the question paper

The paper shall consist of two sections as follows:

Section A: Public Health (35 marks)
Section B: Public Health Dentistry and Preventive Dentistry (35 marks)

Each paper shall contain the structure as follows:

One structured Long answer question (LAQ) for 10 marks
Three Short answer questions (SAQ) for 5 marks (3 x 5 = 15)
Five Very short answer questions (VSAQ) for 2 marks (2 x 5 = 10)

The questions can be distributed as follows:

70 % from the Must know areas
20 % from Desirable to know areas
10 % from Nice to know areas

SECTION A

If LAQ is from Concept of Health and Disease				
TOPICS	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (2X5)**	**MARKS**
Concept of Health and Disease and Concept of Prevention	1			10
International and National Public Health			1	2
General Epidemiology - Basic Measurements, Methods, Sampling , Bias		1	1	7
Planning and Evaluation			1	2
Biostatistics		1		5
Health Education		1		5
Environment and Health Waste Disposal			1	2
Behavioral Sciences			1	2

If LAQ is from Health Education				
TOPICS	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (2X5)**	**MARKS**
Concept of Health and Disease and Concept of Prevention		1		5
International and National Public Health			1	2
General Epidemiology - Basic Measurements, Methods, Sampling , Bias		1	1	7
Planning and Evaluation			1	2
Biostatistics		1		5
Health Education	1			10
Environment and Health Waste Disposal			1	2
Behavioral Sciences			1	2

SECTION B

If LAQ is from Epidemiology of Oral Diseases				
TOPICS	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (2X5)**	**MARKS**
Epidemiology of Oral Diseases	1			10
Preventive Dentistry		1		5

School dental Health Programs		1		5
Indices of Dental Diseases Oral Health Survey		1		5
Fluorides in Dentistry			3	6
DCI and IDA COPRA			1	2
Dental Manpower & Finance in Dentistry			1	2

If LAQ is from Dental Man Power				
TOPICS	**LAQ (1X10)**	**SAQ (3X5)**	**VSAQ (2X5)**	**MARKS**
Epidemiology of Oral Diseases			1	2
Preventive Dentistry		1	1	7
School dental Health Programs		1		5
Indices of Dental Diseases Oral Health Survey			1	
Fluorides in Dentistry		1	1	7
DCI and IDA COPRA			1	2
Dental Manpower & Finance in Dentistry	1			10

(UNIVERSITY MODEL QUESTION PAPER)

Time: 3 hours **Max. Marks: 70**

- **Section A and B should be answered in separate answer books**
- **Illustrate your answers with suitable diagram**

Section A [Public Health]

Long answer question: **1X10 = 10 marks**

1. Define Health? Enumerate and explain the Indicators of Health

Short Answer Questions: **3X5 = 15 marks**

2. What are various used of epidemiology?
3. Enumerate and Explain the Measures of Central Tendency
4. What are all the audio visual aids used in Health Education

Very Short Question: **5X2 =10 marks**

5. Explain Quarantine in public health
6. What is Bimodality?
7. What are all the resources consider in planning?
8. Explain dumping in waste management
9. What is Hand over Mouth Technique?

Section B [Public health Dentistry and Preventive Dentistry]

Long answer question: **1X10=10 marks**

1. Write in Detail about Etiology, Epidemiology and Prevention of Periodontal Disease

Short Answer Questions: **3X5 = 15 marks**

1. Explain preventive resin restoration
2. Write in detail about Silness&Loe Plaque Index
3. What is Tattle tooth School Oral health Program

Very Short Question **5X2 =10 marks**

1. Explain School water fluoridation
2. Management of Acute fluoride Toxicity
3. Enumerate the various topical mechanism of action of fluoride
4. What is Written Consent?
5. What is Usual Customary and reasonable fee?

Recommended books

1. Dentistry Dental Practice and Community by David F. Striffler and Brain A. Burt, Edn. –1983, W. B. Saunders Company
2. Dental Public Health and Community Dentistry Ed by Anthony Jong Publication by The C. V. Mosby Company 1981
3. Oral Health Surveys- Basic Methods, 4th edition, 1997, published by W. H. O. Geneva available at the regional office New Delhi.
4. Preventive Dentistry by Murray, 1997.
5. Text Book of Preventive and Social Medicine by Park and park, 14th edition.
6. Essentials of Public Health Dentist
7. Research methodology and Bio-statistics by

DENTAL COUNCIL OF INDIA

Revised Internship Programme, 2011

CURRICULUM OF DENTAL INTERNSHIP PROGRAMME

1. The duration of Internship shall be one year.
2. All parts of Internship shall be done in a Dental college duly recognized/ approved by the Dental Council of India for the purpose of imparting education and training to Dental graduates in the country.
3. The Internss shall be paid stipendiary allowance during the period of an internship not extending beyond a period of one year.
4. The internship shall be compulsory and rotating as per the regulations prescribed for the purpose.
5. The degree BDS shall be granted after completion of internship

Determinants of Curriculum for Internship for Dental Graduates :

The Curricular contents of internship training shall be based on.

i) Dental health needs of the society.

ii) Financial, material and manpower resources available for the purpose

iii) National dental health policy

iv) Socio-economic conditions of the people in general

v) Existing dental as also the primary health care concept, for the delivery of health services

vi) Task analysis of what graduates in dentistry in various practice settings, private and government service actually perform

vii) Epidemiological studies conducted to find out prevalence of different dental health problems, taking into consideration the magnitude of dental problems, severity of dental problems and social disruption caused by these problems.

Objectives:

A. To facilitate reinforcement of learning and acquisition of additional knowledge:-

a. Reinforcement of knowledge
b. Techniques and resources available to the individual and he community. Social and cultural setting
c. Training in a phased manner, from a shared to a full responsibility

B. To facilitate the achievement of basic skills: attaining competence Vs. maintaining competence in:-

a. History taking
b. Clinical examination
c. Performance and interpretation of essential laboratory data
d. Data analysis and inference
e. Communication skills aimed at imparting hope and optimism in the patient
f. Attributes for developing working relationship in the clinical setting and community team work

C. To facilitate development of sound attitudes and habits:-

a. Emphasis on individual and human beings, and not on disease/symptoms
b. Provision of comprehensive care, rather than fragmentary treatment
c. Continuing dental education and learning of accepting the responsibility

D. To facilitate understanding of professionals and ethical principles:-

a. Right and dignity of patients
b. Consultation with other professionals and referral to seniors/ institutions
c. Obligations of peers, colleagues, patients, families and community
d. Provision of free professional services in an emergent situation

E. To initiate individual and group action, leading to disease prevention and dental health promotion, at he level of individuals families and the community

Content (subject matter)

The compulsory rotating paid dental internship shall include training in oral medicine and radiology; oral and maxillofacial surgery; Prosthodontics; periodontics; conservative dentistry; pedodontics; oral pathology and microbiology; orthodontics and community dentistry.

General Guidelines:

1. I shall be task-oriented training. The interns should participate in various institutional and field programmes and be given due responsibility to perform the activities in all departments of the dental colleges and associated institutions.
2. To facilitate achievement of basic skills and attitude the following facilities should be provided to all dental graduates

a. History taking, examination, diagnosis, charting and recoding treatment plan of cases
b. Presentation of cases in a group of seminar
c. Care and sterilization of instruments used
d. Performance and interpretation of essential laboratory tests and other relevant investigations
e. Data analysis and inference
f. Proper use of antibiotics, anti-inflammatory and other drugs, as well as other thereapeutive modalities
g. Education of patients, their relatives and community on all aspects of dental health care while working in the institution as also in the field
h. Communication aimed as inspiring hope, confidence and optimism
i. Legal rights of patients and obligations of dental graduate under forensic jurisprudence

1. Oral Medicine and Radiology

1.	Standardized examination of patients	25 cases
2.	Exposure to clinical, pathological laboratory procedures & biopsies	5 cases
3.	Effective training in taking of radiographs	2 full month
	(intra oral) I.O.(extra oral)E.O.	1
	Cephalogram	1
4.	Effective management of cases in wards	2 cases

2. Oral and maxillofacial surgery

The interness during their posting in oral surgery shall perform the following procedures:

1.	Extractions	50
2.	Surgical extractions	2
3.	Impactions	2

4.	Simple intra maxillary fixations	1
5.	Cysts enucleations	1
6.	Incision and drainage	2
7.	Alveoloplasties, biopsies and frenectomies etc	3

B. The interns shall perform the following on cancer patients :

1. Maintain file work.
2. Do extractions for radiotherapy cases.
3. Perform biopsies.
4. Observe varied cases of oral cancers.

C. The interness shall have 15 days posting in emergency services of a dental/general hospital with extended responsibilities in emergency dental care in the wards. During this period they shell attend to all emergencies under the direct supervosion of oral surgeon during any operation :

1. Emegencies.

   (i) Toothache: (ii) trigemminal neuralgia; (iii) Bleeding from mouth due to trauma, post extraction, bleeding disorder or haemophylia; (iv) Airway obstruction due to fracture mandible and maxilla; dislocation of mandible; syncope or vasovagal attacks; ludwig's angina angina tooth fracture post internhaxillary fixation after general anaesthesia.

2. Work in I. C.U with particular referance to resuscitation procedures.

3. Conduct tutorials on medico-legat aspects including reporting on actual cases coming to casualty. They should have visits to law courts.

3. Prosthodontics

The dental graduates during their internship posting in Prosthodontics shall make :

1.	Complete denture (upper& lower)	-	2
2.	Removable partial denture	-	4
3.	Fixed partial denture	-	1
4.	Planned cast partial denture	-	1
5.	Micellaneous-like reline/overdenture/ repairs of Maxillofacial prosthesis	-	1
6.	Learning use of face bow and semi anatomic Articulator technique		
7.	Crowns		
8.	Introduction of Implants		

4. Periodontics

A. The dental graduates shall perform the following procedures

1.	Prophylaxis	-	15 Cases
2.	Flap Operation	-	2 Cases
3.	Root planning	-	1 Case
4.	Currettage	-	1 Case
5.	Gingivectomy	-	1 Case
6.	Perio-Endo cases	-	1 Case

B. During their one week posting in the community health centers, the interness shall educate the public in prevention of Periodontial diseases.

5. Conservative Dentistry

To faciliate reinforcement of learning and achivement of basic skills, the interns shall perform atleast the following procedures independently or under the guidance of supervisors:

1.	Restoration of extensively mutilated teeth	- 5 Cases
2.	Inlay and onlay preparations	- 1 case
3.	Use of tooth coloured restorative material	- 4 Cases
4.	Treatment of discoloured vital and non-vital Teeth	- 1 Case
5.	Management of dento alveolar fracture	- 1 Case
6.	Management of pulpless, single- rooted teeth without periapical lesion	- 4 Case
7.	Management of acute deto alveaolar Infections	- 2 cases
8.	Management of pulpless, single-rooted Teeth with prepheral lesion period	- 1 Case
9.	Non-surgical management of traumatised teeth during formative period.	

6. Pedodontics and Preventive Dentistry

During their posting in Pedodontics the Dental graduates shall perform :

1.	Topical application of fluorides including varnish	- 5 Cases
2.	Restorative procedures of carious deciduous teeth In children	- 10 Cases
3.	Pulpotomy	- 2 Cases
4.	Pulpectomy	- 2 Cases
5.	Fabrication and insertation of space mainteners	- 1 Case
6.	Oral habits breaking appliances	- 1 Case

7. Oral pathology and microbiology

The intermess shall perform the following:

1.	History-recording and clinical examination	- 5 cases
2.	Blood, Urine and Sputum examination	- 5 cases
3.	Exfoliative Cytology and smears study	- 2 cases
4.	Biopsy – Laboratory Procedure & reporting	- 1 case

8. Orthodontics :

A. The intermess shall observe the following procedure during their posting in orthodontics :

1. Detailed diagnostics procedure for 5patients
2. Laboratory techniques including wire- bending for removable appliances soldering and processing of myo- functional appliances.
3. Treatment of plan options and decisions.
4. Making of bands, bonding procedure and wire insertions
5. Use of extra oral anchorage and observation of force values.
6. Retainers.
7. Observe handling of patients with oral habits causing malocclusion.

The dental graduates and shall do the following laboratory work :

1.	Wire bending for removable appliances and space maintainers including wel doing and heat treatment procedure	- 5 cases

2. Soldering exercises, banding & bonding procedures - 2 cases
3. Cold-cure and heat-cure acrylisation of simple Orthodontics appliances - 5 cases

9. Public Health Dentistry :

1. The interns shall conduct health sessions for individuals and groups on oral health public health nutrition, behavioral sciences, environmental health, preventive dentistry and epidemiology.
2. They shall conduct a short term epidemiological survey in the community, or in the alternate, participate in the planning and methodology.
3. They shall arrange effective demonstration of :
   a) Preventive and interceptive producers for prevalent dental diseases.
   b) Mouth-rinsing and other oral hygiene demonstrations - 5 cases
   c) Tooth brushing techniques - 5 cases
4. Conduction of oral health education programmes at
   a) School setting - 2
   b) Community setting - 2
   c) Adult education programmes - 2
5. Preparation of Health Education materials - 5
6. Exposure to team concept and National Health Care systems :
   a) Observation of functioning of health infrastructure.
   b. Observation of functioning of health care team including multipurpose worker male and female, health educators and other workers.
   c. Observation of at least one National Health Programme:
   d. Observation of interlink ages of delivery of oral health care with primary Health care. Mobile dental clinics, as and when available, should be provided for this teachings.

10. Elective Posting :

The interns shall be posted for 15 days in any of the dental departments of their choice mentioned in the foregoing.

Organisation of content :

The curriculum during the 4years of BDS training is subject based with more emphasis on learning practical skills . During one year internship the emphasis will be on competency-based, community oriental training. The practical skills to be mastered by the interness along with the minimum performance level are given under the course content of different departments of Dental Education. The supervisors should sending it that proper facilities are provided in all departments and attached institution for their performance.

Specification of Teaching Activities :

Didaetic lectures are delivered during the four years in BDS. These shall be voided during the internship programme. Emphasis shall be on chair-side teaching, Small group teaching and discussions tutorials, seminars, ward posting, laboratory posting, field visits and self learning.

Use of Resource Materials:

Overhead projectors, slide projectors, film projectors chart diagrams, photographs, posters, specimens,

models and other audiovisual aids shall be provided in all the Dental Colleges and attached institutions and field area. If possible, television, video and tapes showing different procedures and techniques to be mastered by the intermess should be provided.

Evaluation :

1. Formative Evaluation :

Day-do-day assessment of the intemess during their internship posting should be done. The objectivities that all the interns must acquire necessary minimum skills required for carrying out day-to-day professional work competently. This can be achieved by maintaining records and performance data book by all intermess. This will not only provide a demonstrable evidence; of the processes of training but more importantly, of the intermess own acquisition of competences as rotated to performance. It shall form a part of formative evaluation and shall also constitute a component of final grading of interns.

2. Summative Evaluation :

It shall be based on the observation of the supervious of different departments and the records and performance data book maintained by the interns. Grading shall be done accordingly.

Rural Services :

In the rural services, the student will have to participate in-

1. Community Health Monitoring programmes and services which include Preventive, Diagnostic and corrective procedures.
2. To create educational awareness about dental hygiene and diseases.
3. Conduction of Oral Health Education Programme at –

a)	School Setting	-	5
b).	Community Setting	-	5
c).	Adult Education Program	-	5

4. Compulsory setup of satellite clinics in remote areas - 1
5. Lectures to create awareness and education in public forums about the harmful affects of tobacco consumption and the predisposition to oral cancer – two Lecturers per student.

Period of Posting :

1.	Oral Medicine & Radiology	-	1 month
2.	Oral & Maxillofacial Surgery	-	1½ months
3.	Prosthodontics	-	1½ months
4.	Periodontics	-	1 month
5.	Conservative Dentistry	-	1 month
6.	Pedodontics	-	1 month
7.	Oral Pathology and Microbiology	-	15 days
8.	Orthodontics	-	1 month
9.	Community Dentistry/Rural services	-	3 months
10.	Elective	-	15 days