AVICENNA
DENTAL COLLEGE

STUDY GUIDE

2024-2025

Program: Bachelor of Dental Surgery
Year: 4th Professional Year
Subject: Operative Dentistry
Batch No: D21
Session: 2024-2025

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Introduction to Study Guide

Welcome to the Avicenna Dental College Study Guide!

This guide serves as your essential resource for navigating the complexities of your dental education at Avicenna Medical & Dental College. It integrates comprehensive details on institutional framework, curriculum, assessment methods, policies, and resources, all meticulously aligned with UHS, PMDC and HEC guidelines.

Each subject-specific study guide is crafted through a collaborative effort between the Department of Dental Education and the respective subject departments, ensuring a harmonized and in-depth learning experience tailored to your academic and professional growth.

OBJECTIVES OF THE STUDY GUIDE

1. **Institutional Understanding:**
    - Gain insight into the college's organizational structure, vision, mission, and graduation competencies as defined by PMDC, setting the foundation for your educational journey.
2. **Effective Utilization:**
    - Master the use of this guide to enhance your learning, understanding the collaborative role of the Department of Dental Education and your subject departments, in line with PMDC standards.
3. **Subject Insight:**
    - Obtain a comprehensive overview of your courses, including detailed subject outlines, objectives, and departmental structures, to streamline your academic planning.
4. **Curriculum Framework:**
    - Explore the curriculum framework, academic calendar, and schedules for clinical and community rotations, adhering to the structured guidelines of UHS & PMDC.
5. **Assessment Preparation:**
    - Familiarize yourself with the various assessment tools and methods, including internal exam and external exam criteria, and review sample papers to effectively prepare for professional exams.
6. **Policies and Compliance:**
    - Understand the institutional code of conduct, attendance and assessment policies, and other regulations to ensure adherence to college standards and accrediting body requirements.
7. **Learning Resources:**
    - Utilize the learning methodologies, infrastructure resources, and Learning Management System to maximize your educational experience and academic success.

This guide, meticulously developed in collaboration with your subject departments, is designed to support your academic journey and help you achieve excellence in accordance with the highest standards set by PMDC and HEC.

AVICENNA
DENTAL COLLEGE

BDS Program Outcome Statements

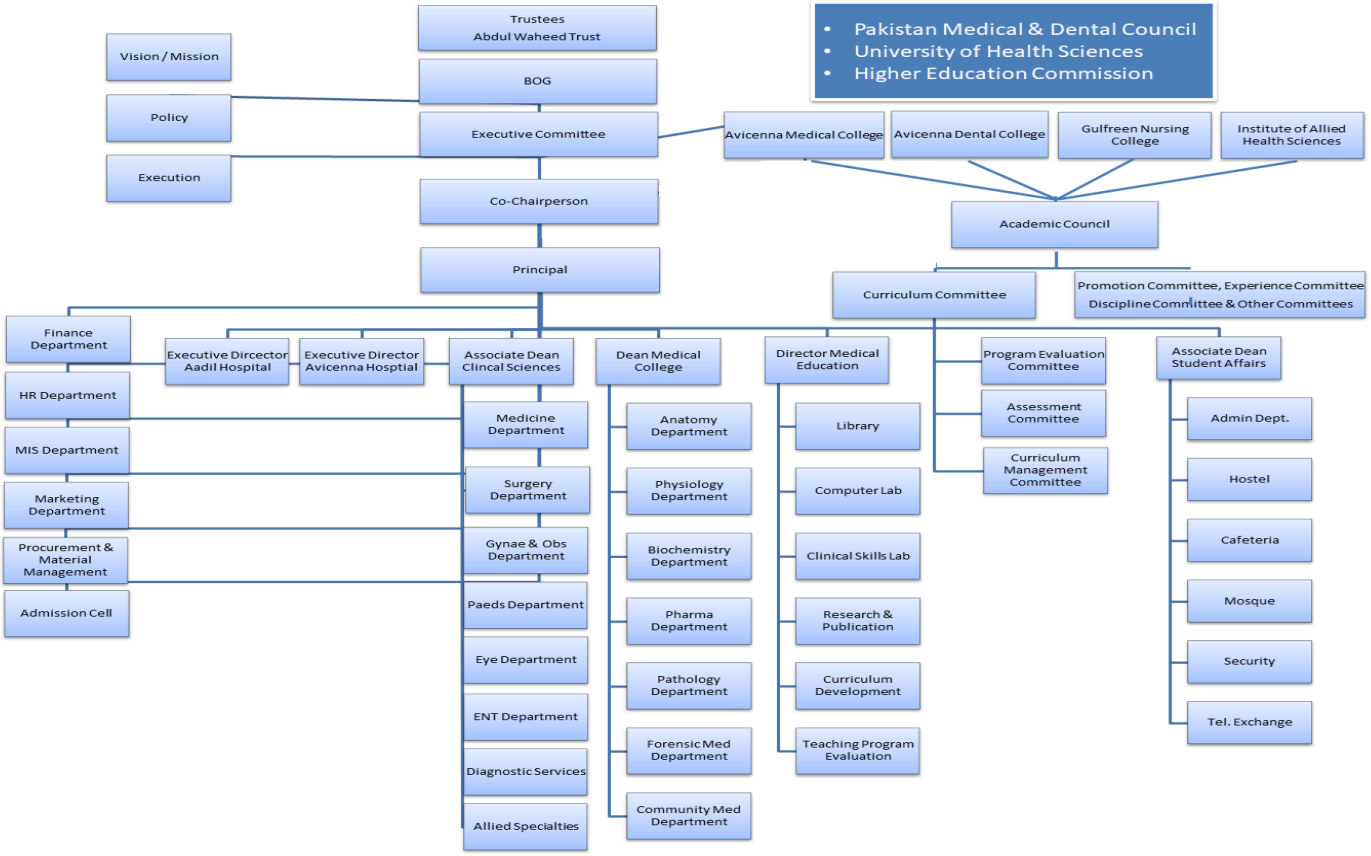
The outcome statements of Avicenna Dental College specify the core competencies and performance standards expected of graduates upon completion of the BDS program.

Upon graduation, students will be able to:

1. Prioritize patient care above all, applying their knowledge and skills in a competent, ethical, and professional manner, and taking responsibility for their actions in complex and uncertain situations.
2. Conduct thorough consultations and assessments of patients.
3. Independently diagnose and manage common, non-critical dental and oral health conditions.
4. Assist in the management of critically ill patients as relevant to dental practice.
5. Demonstrate clear and efficient written and verbal communication skills.
6. Exhibit professional, ethical, and culturally appropriate behavior in all clinical and patient interactions.
7. Promote oral health and advocate for preventive measures against dental diseases.
8. Work effectively as a team member within Pakistan's healthcare system.
9. Apply critical thinking, reflection, research skills, and teamwork capabilities in clinical practice.
10. Pursue personal and professional development with a commitment to lifelong learning.

Avicenna Medical & Dental College Overview

Institutional Organogram



Vision & Mission

AVICENNA MEDICAL COLLEGE

Avicenna Medical & Dental College

AVICENNA DENTAL COLLEGE

Vision

The vision of **Avicenna Medical & Dental College** is to become a college that thrives to achieve improvement in healthcare of masses through creative delivery of educational programs, innovative research, commitment to public service and community engagement in a environment that supports diversity, inclusion, creative thinking, social accountability, life-long learning and respect for all.

Mission

The mission of **Avicenna Medical and Dental College** is to educate and produce competent, research oriented healthcare professionals with professional commitment and passion for life-long learning from a group of motivated students through quality education, research and service delivery for the improvement of health status of the general population.

Message from the Chairman

The Avicenna Medical & Dental College is a project of Abdul Waheed Trust which is a Non-profitable, Non-governmental, Non-political & Social organization, working for the welfare of Humanity and based on Community empowerment. Avicenna Medical College has its own 530 bedded Avicenna teaching Hospital (Not for Profit hospital) within the College Campus & 120 bedded Aadil Hospital, at 15 minutes distance. Separate comfortable hostels for boys & girls are provided on the campus.

Our students benefit from the state of the art College Library with facilities of Internet & online Journals that remain open 15 hours a day, for our students & faculty members. I am particularly pleased with the hard work by the Faculty and Students in the achievement of historic 100% results for all the classes. It is a rare achievement and speaks of dedication of the Faculty and Staff. Our motto is Goodness prevails and we aim at producing Doctors' who are knowledgeable, competent in clinical skills and ethical values.

Avicenna Medical College & Hospital was founded to provide quality health care services to the deserving patients belonging to the rural areas near Avicenna Hospital as well as to provide quality medical education of international standard to our students. The Hospital provides all medical services and Lab diagnostics to the local population at minimal cost. So far by the grace of Allah Almighty the number of patients being treated and operated upon at our Hospital is increasing every day as there is no other public or charity hospital in the circumference of 20km. We have already established two Satellite Clinics in the periphery which are providing outdoor care while admission cases are brought to the Hospital in Hospital transport.

Following the success of our reputable Medical College and Hospital, we were able to successfully establish Avicenna Dental College which is recognized by the Pakistan medical & Dental Council & University of Health Sciences. To date, we have enrolled five batches in our dental college and we aim to achieve the same level of success for our dental students as our medical students.

Chairman
Abdul Waheed Sheikh
Avicenna Medical & Dental College

Message from the Principal

Prof. Dr. Sohail Abbas Khan
Principal Dental College
MDS, Dip Op (Hons) BDS

Our institution, Avicenna Dental College, is dedicated to provide a top-tier education that merges high academic standards with clinical application, preparing our students to excel both in theoretical knowledge and in clinical practice.

The field of dentistry is both dynamic and demanding, requiring a commitment to continuous learning, ethical practice, and compassionate patient care .Our faculty's profound knowledge and hands-on approach to teaching create a dynamic learning environment. Their support and guidance are instrumental in shaping skilled and confident dental professionals.

I am confident that the dedication of our faculty and the strength of our educational programs will continue to drive the success of our students and contribute to the advancement of the dental profession.

It is a matter of great privilege to be associated with Avicenna Dental College. Our institution boasts of renowned, well-qualified and devoted faculty members in each and every specialty of dentistry. We are looking forward to diligently equipping our undergraduates with comprehensive artistic and ethical oral health care.

Our goal is to inspire a lifelong passion for learning and innovation in our students, ensuring they are well-prepared to meet the evolving challenges of the dental profession. I look forward to collaborating with our students on this transformative journey, guiding them toward achieving excellence in oral health care.

7-Star Doctor Competencies (PMDC)

According to national regulatory authority PMDC, a Pakistani medical/dental graduate who has attained the status of a 'seven-star doctor' is expected to demonstrate a variety of attributes within each competency. These qualities/ generic competencies are considered essential and must be exhibited by the individual professionally and personally.

1. Skillful / Care Provider.
2. Knowledgeable / Decision Maker.
3. Community Health Promoter / Community Leader.
4. Critical Thinker / Communicator
5. Professional / Lifelong learner.
6. Scholar / Researcher
7. Leader/ Role Model / Manager

About Avicenna Dental College

Avicenna Dental College is a purpose-built, fully equipped Dental institution with experienced and excellence-driven faculty to train high-quality dental professionals in Pakistan.

Avicenna Dental College runs under the umbrella of Abdul Waheed Trust. Abdul Waheed Trust is a non-profit social welfare organization and registered under the Societies Act with the Registrar of Societies. The Trust is legalized through a Trust Deed that bears necessary rectifications. The Trust Deed is further supported by its Memorandum and Article of Association that authorizes the establishment and operation of the Medical College, the Dental College, the Nursing College, the Allied Health Sciences College, and other activities in the healthcare sector.

In 2018, Avicenna Dental College was recognized by the Pakistan Medical & Dental Council. With the advent of advanced tools and technology in every field of health science, dentistry today has shot up to the greater end of the gamut with superior choice and promises in dental therapy in the very vicinity of the common man. ADC promises to be one such neighborhood.

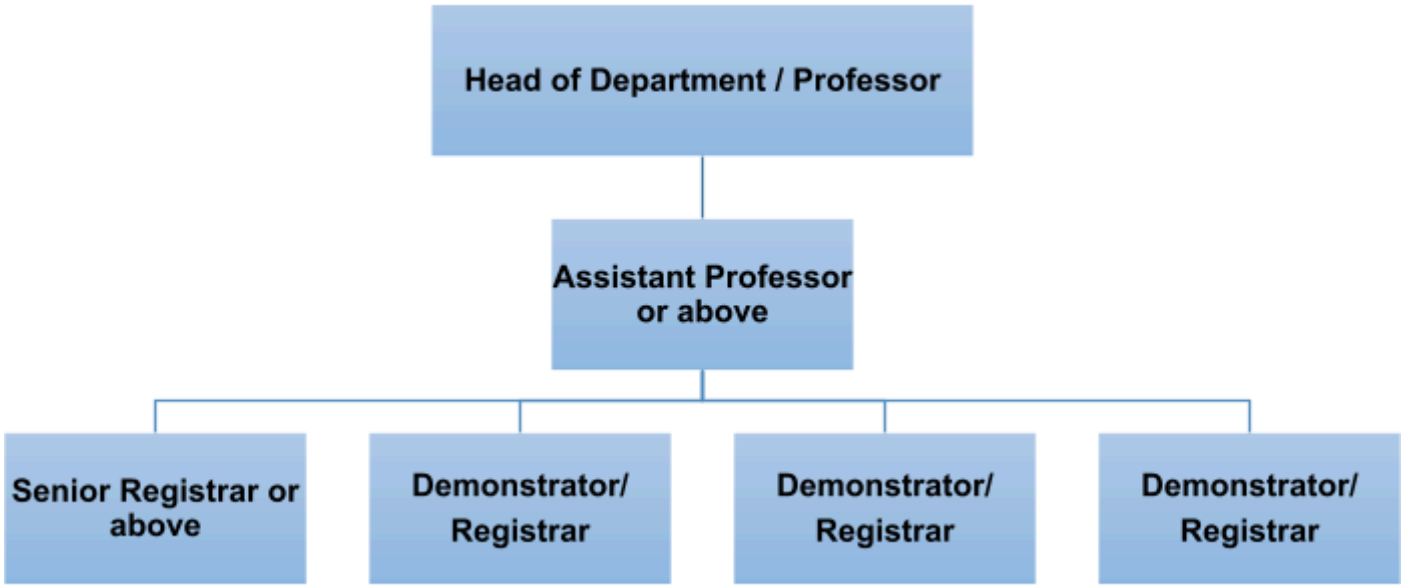
Department & Subject Overview

Note from the Head of Department

Theoretical knowledge in dentistry alone is insufficient for mastery; it demands consistent hands-on practice to achieve excellence. Our primary aim is to enhance SKILL MANIPULATION in our students as per as theoretical knowledge

Prof. Dr. Sohail Abbas Khan
(BDS, MDS, Dip.Op Hons.)
Principal/Professor & Head of Department
Department of Operative Dentistry

Departmental Organogram (as per PMDC guidelines)



Faculty Members

Name	Designation	Qualification
Prof. Dr.Sohail Abbas khan	Head of Department	MDS, Dip OP (Honrs), BDS
Dr. Salman Rashid	Assistant Professor	BDS, FCPS
Dr. Nighat Shafi	Assistant Professor	BDS, FCPS
Dr. Tabassum Awais	Assistant Professor	BDS, MDS
Dr. Ameer	Registrar	BDS
Dr. Ambreen	Registrar	BDS
Dr. Shumaila	Registrar	BDS
Dr. Sahar	Registrar	BDS

Goal of the Department

The department's main aim is to educate students with the latest evidence and most effective diagnostic methods. Our goal is to ensure and sustain optimal function and comfort for patients by diagnosing, preventing, and treating all defects of teeth.

Course Objectives

By the end of the year, students are expected to achieve clinical proficiency in operative restorative procedures, along with effective patient management.Additionally, they are also expected to acquire knowledge of infection control procedures specific to operative practices

Attendance Requirement & Internal Assessment Criteria

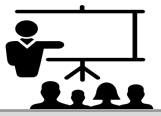
The institution follows the regulations for examinations of the UHS in letter and spirit. The students require **85% attendance** in all academic sessions and **50% marks** in internal assessments and send-up examinations to be eligible for the UHS Professional Examinations.

Learning Resources & Pedagogy

Book Recommendations

Sr.	Book Name	Author	Edition
1.	Operative dentistry Modern theory and practice	M.A. MARZOUK	
2.	Sturdevant Art & Science of Operative Dentistry	Andree V.Ritter	7th
3.	Hartys' Endodontics in clinical practice	Hartys	2nd
4.	Grossman's Endodontic practice	B.Suresh Chandra	13th
5.	Planning and making Crown & Bridges	Bernard GN.Smith	4th
6.	Pediatric Dentistry -	Richard Welbury; Monty S. Duggal	5th

Traditional & Innovative Teaching Methodologies



Sr.	Pedagogical Methodologies	Description
1.	Lectures	Traditional method where an instructor presents information to a large group of students (large group teaching). This approach focuses on delivering theoretical knowledge and foundational concepts. It is very effective for introducing new topics.
2.	Tutorial	Tutorials involve small group discussion (SGD) where students receive focused instruction and guidance on specific topics.
	Demonstrations	Demonstrations are practical displays of techniques or procedures, often used to illustrate complex concepts or practices, particularly useful in dental education for showing clinical skills.
3.	Practicals	Hands-on sessions where students apply theoretical knowledge to real-world tasks. This might include lab work, clinical procedures, or simulations. Practicals are crucial for developing technical skills and understanding the application of concepts in practice.
4.	Student Presentations	Students prepare and deliver presentations on assigned topics. This method enhances communication skills, encourages students to explore topic in-depth. It also provides opportunities for peer feedback and discussion.
5.	Assignment	Tasks given to students to complete outside of class. Assignments can include research papers, case studies, or practical reports. They are designed to reinforce learning, assess understanding, and develop critical thinking and problem-solving skills.

7.	Self-directed Learning	Students take initiative and responsibility for their own learning process. Students are encouraged to seek resources, set goals, and evaluate their progress. This is a learner-centered approach where students take the initiative to plan, execute, and assess their own learning activities. This method promotes independence, critical thinking, and lifelong learning skills.
8.	Flipped Classroom	In this model, students first engage with learning materials at home (e.g., through videos, readings) and then use class time for interactive activities, discussions, or problem-solving exercises. This approach aims to maximize in-class engagement and application of knowledge.
9.	Peer-Assisted Learning (PAL)	A collaborative learning approach where students help each other understand course material. PAL involves structured peer tutoring, study groups, or collaborative tasks. It enhances comprehension through teaching, reinforces learning, and builds teamwork skills.
10.	Team-based Learning (TBL)	A structured form of small group learning where students work in teams on application-based tasks and problems. Teams are responsible for achieving learning objectives through collaborative efforts, promoting accountability, and deeper understanding of the material.
11.	Problem-based Learning (PBL)	Students work on complex, real-world problems without predefined solutions. They research, discuss, and apply knowledge to develop solutions. PBL fosters critical thinking, problem-solving skills, and the ability to integrate knowledge from various disciplines.
12.	Academic Portfolios	A collection of student's work that showcases learning achievements, reflections, and progress over time. Portfolios include assignments, projects, and self-assessments. They provide a comprehensive view of student development, highlight strengths and areas for improvement, and support reflective learning (experiential learning)

Flipped Classroom

Infrastructure Resources

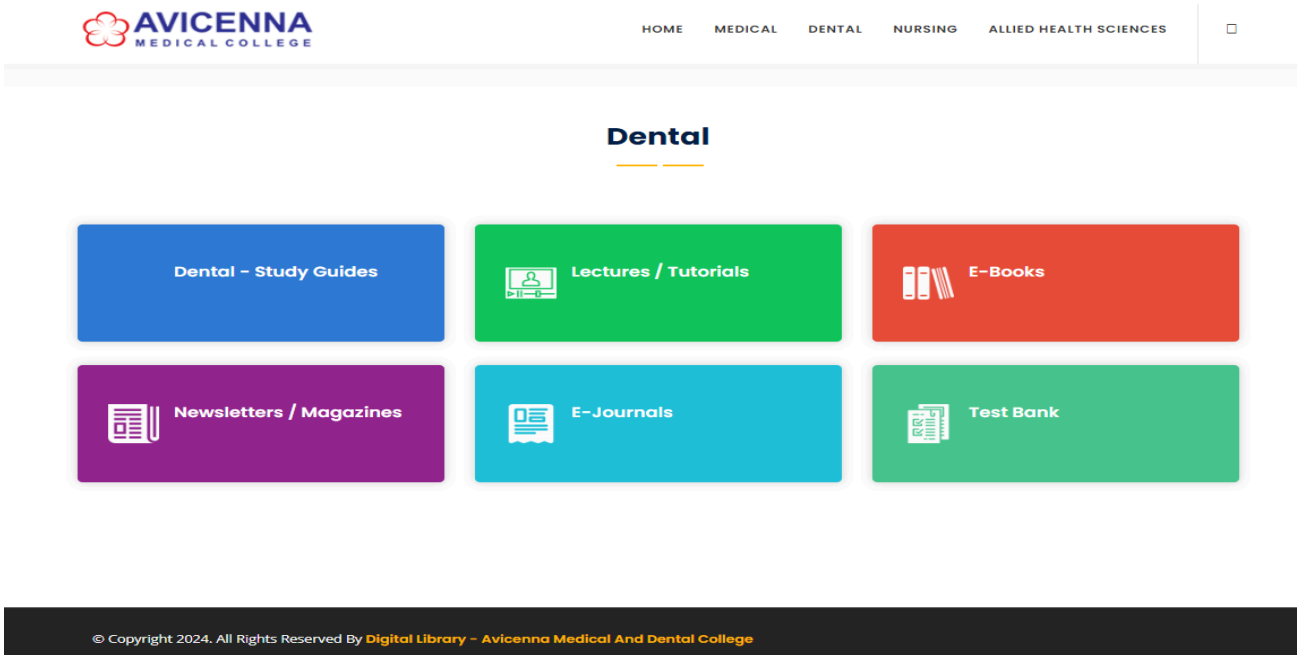
Sr.	Infrastructure Resources	Description
1.	Lecture Hall	Each year has a dedicated lecture hall, totaling four lecture halls for the four professional years. These halls are equipped with modern audiovisual aids to support effective teaching and learning.
2.	Tutorial Room	The college's tutorial rooms, each with a capacity of 30, are specifically designed to support small group discussions and interactive sessions. These rooms facilitate personalized instruction, enabling more engaged and effective learning through direct interaction between students and instructors.
3.	Lab	The college is equipped with state-of-the-art laboratories for practical and clinical work. Each lab is designed to support various disciplines, to facilitate hands-on learning.
4.	Library on campus	A huge library occupies full floor has 260 seats including study carrels and group-discussion tables. Latest reference books, of Basic and Clinical Sciences along with national & international journals are available in the library.
5.	Digital Library	The digital library offers access to a vast collection of e-books, online journals, research databases, and other digital resources. It supports remote access and provides tools for academic research and learning.
6.	Learning Management System (LMS)	The LMS is a comprehensive online platform that supports course management, content delivery, student assessment, and communication. It provides tools for tracking progress, managing assignments, and facilitates ongoing academic activities.
7	Phantom Labs	Specialized Phantom Labs are available for advanced simulation and practice in dental procedures. These labs provide high-fidelity models and simulators that help students refine their clinical skills in a controlled environment.
8.	Mess & Cafeteria	The College has its own on-campus Mess which caters to 600 students. All food items including dairy, meat, and vegetables are sourced organically and bought in at the time of cooking, in order to ensure that students get freshly cooked meals at all times Students form the Mess committee which decides the mess menu in consultation with other students. The Mess offers fresh food to all residents three times a day. However, day scholars are also welcome to use the Mess facility at a reasonable cost. Two 50- inch LCD screens provide students an opportunity to get entertained during their meal times.
9.	Gymnasium & Sports	We recognize sports as a pivotal key to shape and maintain students' personality and good health. The College has indoor and outdoor sports facilities to help enhance the cognition and capacity to learn.

		There is a proper sports section for various games like basketball, football, volleyball, and cricket. The gym itself is fully equipped with modern machinery both for students and faculty.
10	IT Lab	The IT Lab is equipped with modern computers and software available for students who need access for academic purposes.
11.	Auditorium	The college has a spacious auditorium equipped with advanced audio-visual facilities. It is used for large-scale lectures, guest presentations, and academic conferences, providing a venue for students to engage with experts and participate in important educational events.
12.	Examination Halls	The college provides dedicated examination halls that are designed to accommodate a large number of students comfortably. These halls are equipped with necessary facilities to ensure a smooth and secure examination process, including proper seating arrangements, monitoring systems, and accessibility features.

Digital Library & Learning Management System (LMS)

1. The COVID-19 pandemic highlighted the necessity of interactive online teaching for better retention of topics by students. Strategies like online learning management system (LMS), online discussions, online quizzes, assignment design, and flipped learning enhance student engagement in online education when needed.

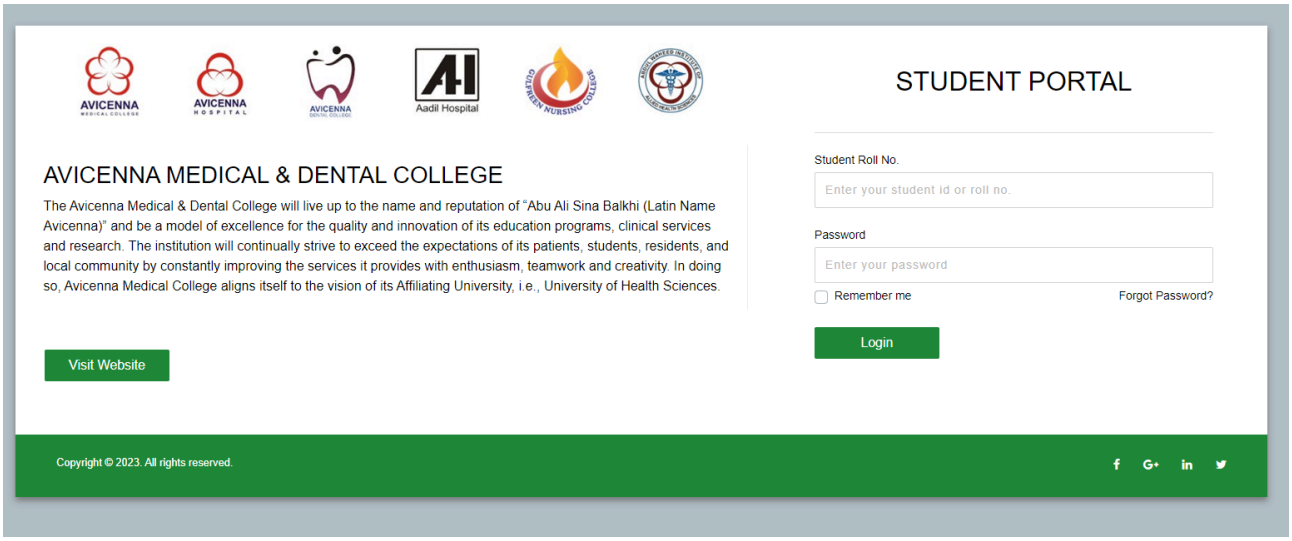
2. Avicenna Medical & Dental College lays emphasis on the provision of learning material and online video lectures, video tutorials in the e-library and learning resource center, which has a dedicated website of Avicenna Medical College to enable the students to develop concepts and clarify their doubts, if they have not been able to do so in the teaching sessions during college hours. The digital library can be approached on http://digital.avicennamch.com/.



3. The institution has also endeavored to link itself with the digital libraries and e-library of the University of Health Science (UHS) and Higher Education Commission (HEC) to enable the students to benefit from the valuable resource material, lectures and knowledge bank at these sites. The links are available with the HEC http://www.digitallibrary.edu.pk/ and learning management system of UHS http://lms.uhs.edu.pk .

4. The Learning Management System (LMS) at Avicenna Medical & Dental College is a comprehensive platform managed by the Department of Student Affairs. It is designed to facilitate effective communication and information exchange between students, parents, faculty, and administrative staff. The LMS portals are specifically tailored to meet the needs of the following stakeholders:

   a. **Students**: For academic resources and scheduling.
   b. **Parents:** For monitoring academic progress and other relevant information.
   c. **Faculty:** For managing course content and academic activities.
   d. **Department of Student Affairs:** For overseeing administrative functions.
   e. **Department of Medical/Dental Education:** For overseeing academic functions.



5. Students can access a comprehensive range of academic resources and information through the student portal. By logging in with their roll number and password, students can:

   - Look at their attendance and results.
   - Review academic activities and weekly timetables/schedules.
   - Access rotation planners and test schedules.
   - Check for any notification, assignment or resource material from their teachers.

6. The information to the parent is duplicated by the issuance of the password and login to the Students Learning Management System which is dedicated to the Academic Program of the students. The parents can view the following by logging in to the mobile app of Avicenna Student Management System:

   a) Syllabus
   b) Table of specifications
   c) Annual Planner
   d) Synopsis
   e) Block Time Table
   f) Weekly training program
   g) Allocation of Marks
   h) Assessment calendar
   i) Results of tests / exams*
   j) Students' attendance record
   k) Fees & fines

Assessment Guidelines

Assessment in dental education is a critical component designed to ensure that dental students acquire the necessary knowledge, skills, and competencies required for effective dental practice.

Assessment drives learning! – George E. Millar

You will encounter a variety of assessment methods, each serving a specific purpose.

- Written examinations, including multiple-choice and essay questions, will test your grasp of theoretical concepts and subject matter.
- Practical assessments will require you to demonstrate your clinical skills and ability to apply knowledge in real-world scenarios.
- Oral exams will evaluate your communication skills and reasoning abilities through case discussions and problem-solving exercises.
- Clinical skills and work-place based assessments will observe your hands-on proficiency and patient management capabilities.

At Avicenna Medical & Dental College, internal assessments are systematically conducted throughout each academic year of the BDS program, as per the guidelines established by the University of Health Sciences (UHS). These assessments, overseen by the Assessment Cell, adhere to either the Annual Subject-Based System or the Integrated/Modular System, depending on the curriculum structure.

Notably, beginning with the 2024-25 academic year, the weightage of internal assessments will be increased from 10% to 20%. The UHS administers professional examinations independently, organizing them at designated neutral sites and appointing external examiners to ensure objectivity and fairness.

Internal Assessment Weightage	10%	100 %
External Assessment Weightage	90%	

Internal Assessment Criteria

Internal Assessment	Paper	Assessment Methods	Percentage Weightage
Grand Tests	Theory	MCQs SEQs	30%
Early Session Exam	Theory	MCQs SEQs	70%
Mid Session Exam	Theory	MCQs SEQs	
Clinical Assessment	Batch Clinical Assessment	Practical Viva	100%
Send-up Exam	Theory	MCQ SEQ	100%
	Final Clinical Assessment	Practical Viva	100%
Total			400%

Reference attached on next page.

Avicenna Dental College

Examination Marks Scheme 2024-2025

3rd Year BDS

Form No	BDS-3 Form-1		BDS-3 Form-2		BDS-3 Form-4		BDS-3 Form-5		BDS-3 Form-6			
Test Type	Grand Test				Session Exam				Send Up			
Mode of Exam	Theory		Practical		Theory		Practical		Theory		Practical	
Weightage	(1,2)* 30%				(3,4)* 70%				100%			
General Medicine 200	MCQ 40, SEQ 30	70	VIVA	30	MCQ 45, SEQ 45	90	Viva	50	MCQ 45, SEQ 45	90	Viva	50
General Surgery 200	MCQ 40, SEQ 30	70	VIVA	30	MCQ 45, SEQ 45	90	Viva	50	MCQ 45, SEQ 45	90	Viva	50
Periodontology 200	MCQ 40, SEQ 30	70	VIVA	30	MCQ 45, SEQ 45	90	Viva	50	MCQ 45, SEQ 45	90	Viva	50
Oral Medicine 100	MCQ 20 SEQ 30	50	OSPE	50	MCQ 21, SEQ 24	45	OSPE 45	45	MCQ 21, SEQ 24	45	OSPE 45	45
Oral Pathology 200	MCQ 40, SEQ 30,	70	OSPE 25 VIVA 25	50	MCQ 45, SEQ 45	90	OSPE 45, VIVA 45	90	MCQ 45, SEQ 45	90	OSPE 45, VIVA 45	90

Clinical

tch Clinical Assessment (BCA)					Final Clinical Assessment (FCA) *6 (Late Session & Send up Exam)			
Form No	BDS-3 Form-7		BDS-3 Form-8		BDS-3 Form-9		BDS-3 Form-10	
Test Type	Early Ward Test		Mid Ward Test		Grand Ward Test			
Weightage	20%		30%		50%		100%	
General Medicine 200	OSPE 30, VIVA 20	50	OSPE 40, VIVA 60	100	Short Case I 15, Long Case II 30, OSPE 45	90	Short Case I 15, Long Case II 30, OSPE 45	90
General Surgery 200	OSPE 30, VIVA 20	50	OSPE 30, VIVA 70	100	Short Case I 30, Long Case II 30, OSPE 30	0	Short Case I 30, Long Case II 30, OSPE 30	90

Batch Clinical Assessment (BCA)			Final Clinical Assessment (FCA) *6 (Late Session & Send up Exam)	
Weightage	100%			
Periodontology 200	OSCE 45,Viva 45,	90	OSCE 45,Viva 45,	90
Oral Medicine 100	OSCE / OSPE 45	45	OSCE / OSPE 45	45

NON EXAMINABLE SUBJECTS

Operative Dentistry	Viva 50
Prosthodontics	Viva 50
OMFS	Viva 50

NOTE: * If Viva/OSPE is held along with Theory test, The Theory test will get 15% weightage & VIVA / OSPE will get 15% Weightage in Grand Test

NOTE 2 : *If Viva/OSPE is not held for any reason Theory test will get full 30% weightage in Grand Test

NOTE 3 : *If Viva/OSPE is held along with Theory test , The Theory test A20:Q21 will get 30% weightage & VIVA / OSPE will get 30% Weightage in Session Exam

NOTE 4 : *If Viva/OSPE is not held for any reason Theory test will get full 70% weightage in Session Exam

NOTE 5 : * Batch Clinical Assessment(BCA) Clinical exam held at the end of each rotation for each batch

NOTE 6 : * Final Clinical Assessment(FCA) Exit exam at the end of Late Session & Send up exam Before Final Prof for all students

HOD General Medicine	HOD General Surgery	HOD Periodontology	HOD Operative Dentistry	HOD Prosthodontics	HOD OMFS	HOD Oral Medicine

HOD Assessment Cell	Principal Avicenna Dental College	Chairman Avicenna Medical College

External Assessment

Paper Details		Assessment Methods	Total Marks	Percentage Weightage
Theory ● 90 marks ● 3 hrs	External Assessment	45 MCQs (1 mark each)	45 marks	50 %
		15 SEQs (3 marks each)	45 marks	
	Internal Assessment	See Internal Assessment Criteria	10 marks	
Practical ● 90 marks ● 3 hrs	External Assessment	Viva	90 marks	50%
	Internal Assessment	See Internal Assessment Criteria	10 marks	
Total			200 Marks	100%

Sample Paper

MCQ

A 65 years old male patient came to your office complaining of pain related to tooth #36.The pain is provoked by drinking tea or coffee and lasts for 10 minutes after removal of the stimulus What is the most probable diagnosis for this case?

Option:

a) Irreversible Pulpitis *
b) Pulp necrosis
c) Reversible Pulpitis
d) Trauma from occlusion

COGNITIVE LEVEL: Recall

DIFFICULTY LEVEL: Easy

IMPORTANCE: Must Know

REFERENCE: Hartys Book of Endodontics. Chapter 3 : Diagnosis

TIME ALLOWED: 45 minutes

1. Knowledge of the root canal anatomy is important to perform the root canal treatment of the tooth. Which canal form is predominant in Mandibular Canine?

a)Type 1 c) Type 2 e) Type 3

b) Type 4 d) Type 5

2. The prognosis of RCT treated tooth depends on the quality of apical seal. What is the distance between the Apical Foramen and secondary cementum at the root apex

a) 0.2-2mm c) 1-3mm e) 3-4 mm

b) 5-6mm d) 7-8mm

3. Tooth formation starts with crown formation followed by root completion. At what age the root apices of permanent second molar teeth are fully formed?

a) 19years c) 22 years e) 17 years

b) 16 years d) 20 years

4. Biocompatible material should be placed over the pulp in order to maintain its vitality.What is the procedure called in which the pulp is covered with a protective material directly over the site of the exposure.

a) Direct pulp capping c) Indirect pulp capping e) Pulpotomy

b) Pulpectomy d) Apexification

5. In endodontics the primary concern should be the complete removal of pulp from root canals. What is the Instrument of choice for the removal of pulp?

a) Barbed Broaches c) H files e) C files

b) K files d) Pesso reamers

6. Proper working length determination is important step for the obturation of root canals .What method is commonly used for estimation of working length of root canal?

a) Radiograph c) Experience e) Electrode method

b) Cone beam Method d) Harley method

7. Inadequate cleaning and shaping of canal lead to reduced prognosis of endo treated tooth. What is the technique of root canal preparation called that involves preparation of coronal root and mid root flaring?

a) Crown Down technique c) Crown up technique e) Balanced force technique

b) Rotational technique d) Mechanical technique

8. Calcium hydroxide is considered as an ideal pulp capping agent. What is its property for which it is considered ideal material for pulp capping?

a) It has the best seal over pulp formation

b) Short working time

c) It is alkaline in nature

d) Lower cost

e) It induces reparative dentine formation

9. A 20 years old patient come to the clinic for the amalgam restoration of tooth number 46. What is recommended depth of the occlusal cavity in class 1 cavity preparation for amalgam?

a) 1.5-2mm
c) 2-2.5mm
e) 2.5-3mm
b) 0.5-1mm
d) 4mm

10. Toileting of cavity is one of the important principle of GV Black rules .What does the term “Toilet of cavity” refers to

a) Removal of debris by washing with water

b) Removal of debris by cold air spray

c) Removal of debris by hot air spray

d) Washing the cavity with soap solution

e) Washing the cavity with medicament

11. Access cavity formation is the first step of root canal treatment. What is the shape of access cavity of upper and lower permanent pre-molars ?

a) Rectangular
c) Trapezoidal
e) Oval
b) Triangular
d) Diamond

12. Whenever the speed of cutting increases during tooth preparation. Which parameter can prevent the damage to pulp dentin organ?

a) Pressure must be reduced

b) Vibration of instrument should increase

c) Size of cutting instrument increased

d) Air spray should be done

e) Pressure should be increased

13. While restoring the class II cavity for amalgam using matrix band and retainer. Before assembling the matrix band and the retainer. What should be done to un-contoured matrix band?

a) Straight
c) Polished
e) Curved
b) Burnished
d) Smooth

14. In complex amalgam restorations dentinal pins are indicated. What does the dentinal pins in an amalgam restoration provides?

a) Increase strength
c) Decrease resistance of fracture
e) Increase convenience form

b) Increase retention d) Decreases strength

15.There are three types of dentinal pins. Which type of pin causes minimum stress in dentin?

a) Threaded pin c) Amalgam pin e) Roughened pins

b) Cemented pin d) Friction lock pin

16. Cavity liners applied before restorations have anti-cariogenic effect. Which of the following component is responsible for this property?

a) Calcium c) Phosphate e) Magnesium

b) Strontium d) Fluoride

17. Dentinal pin improves retention of complex amalgam restorations. Which property of dentin permits insertion of threaded pin into hole of smaller diameter?

a) Elasticity c) Mineral content e) Rigidity

b) Resiliency d) Dentinal tubular fluid

18. Intermediary base materials consists of liners, varnishes and bases. Which intermediary base material exhibits “Obtundent” effect property?

a) Calcium hydroxide c) Glass Ionomer cement e) Zinc oxide Eugenol cement

b) Zinc phosphate d) Silicate cement

19. Varnishes comprise of volatile component and resins. What is the recommended thickness of varnishes under the restorations?

a) 1-5 micrometer c) 5-10 micrometer e) 10-15 micrometer

b) 15-20 micrometer d) 20-25 micrometer

20. Mantainance of biological form is one of the GV Black principle. What is the reason for establishing proper proximal contact and contour in addition to maintaining stability?

a) Strength c) Resistance from e) Retention from

b) Occlusal harmony d) Convenience form

21. Crowns of permanent teeth are more bulkier than primary teeth. What is the area of greatest circumference on the facial and lingual surface of the tooth is called?

a) Promixmal contact area c) Height of contour e) Surface of contour

b) Gingival embrasure d) Diameter

22. Maintance of proximal contact provide stability .What is the location of proximal contact area normally in mandibular and maxillary anterior teeth?

a) Apical third inclined lingual

c) Incisal third inclined lingual

e) Apically third

b) Incisal third inclined facially

d) Incisal third inclined facially

23.Matrix band is required to established the biological form of proximal wall.What is name for Universal matrix band retainer ?

a) Ivory 8 retainer

c) Tofflemire retainer

e) Copper band retainer

b) Ivory 1 retainer

d) Sequiland retainer

24. A good matrix band is the one that establishes the correct proximal contact point. What property should matrix band have to established correct contours and contacts ?

a) Elastic

c) Flexible

e) Soft

b) Rigid

d) Stable

25. Improper proximal wall will lead to fracture of restoration. What step should be carried out to the un-contoured band before assembling the matrix band and the retainer?

a) Straight

c) Polished

e) Curved

b) Burnished

d) Smooth

26. For class II restorations wedge placement is required in addition to band placement. What occurs due to improper placement of wedge?

a) Over hang

c) Plaque accumulation

e) Gingival overhang

b) Gingival inflammation

d) Secondary caries

27. Direct pulp cap required direct placement of pulp capping agent over the pulp. What is the ideal material for direct pulp cap?

a) CaOH

c) RMGIC

e) ZnOE

b) GIC

d) Composite

28. Achieving correct working length determine the prognosis of the tooth. What is the working length of the tooth?

a) 0.5-1mm short of radiographic apex

c) 2-3 mm short of radiographic apex

e) Exactly at the apex

b) 1-2mm apical to apex

d) Beyond the apex

29. Pins are indicated for complex restoration. What is the recommended depth of pin is required in dentin?

a) 2mm

c) 3mm

e) 4mm

b) 5mm

d) 1mm

30. Pin channel preparation is required for the placement of pins. Which type of the pin has channel size larger than the pin size?

a) Self threading

c) Friction locked

e) Cemented

b) Minikin

d) Regular

31. Amount of the remaining tooth structure is one of the factor to consider for pin placement. What is the general rule of pin number placement for each loss of cusp?

a) 1 pin / cusp
c) 2 pin / cusp
e) 3 pin / cusp
b) No pin / cusp
d) 4 pin / cusp

32. Pin channel preparation is done in multiple steps. What does the intial step create during pin channel preparation?

a) Mouse hole
c) Pilot hole
e) Depth hole
b) Bur hole
d) Round hole

33. Composite restoration is indicated to restore class II lesion. What base should never be used under composite restorations?

a) Zinc Phosphate cement
c) Zinc oxide Eugenol
e) Glass ionomer
b) Compomer
d) Calcium Hydroxide

34. It is imperative to have a marginal ridge of proper dimension compatible to the dimension of the occlusal cuspal anatomy.What are the planes in which marginal ridge is formed?

a) Mesio- distally
c) Disto-Buccally
e) Occluso-gingivally
b) Bucco-lingually
d) Mesio-buccally

35. Root canal treatment requires the use of various endodontic instruments. What instrument is recommended for the extripation of entire pulp, necrotic debris, and foreign material?

a) Reamers
c) Files
e) Barbed broaches
b) Burs
d) Plain broaches

36. The pulp space is complex and root canals may divide and rejoin, and possess forms that are considerably more involved. In the simplest form, each root has a single canal and a single apical foramen.What this configuration would be identified as according to Vertucci

a) Type I
c) Type II
e) Type III
b) Type IV
d) Type V

37. Intermediary restorative materials are placed beneath the restoration. Which of the following property should be the characteristic of base material?

a) Biocompatibility layer
c) Pulp irritant
e) Non Impervious
b) Slow hardening
d) Discoloration

38. Liners are composed of varnishes plus some therapeutic agent.What is the recommended thickness of liners under the restoration?

a) 10 micrometer
c) 5 micrometer
e) 25 micrometer

b) 15 micrometer d) 50 micrometer

39. CaOH is well known for its reparative dentin formation property.In which category CaOH fall in intermediary base material?

a) Varnish c) Liner e) Sub base

b) Base d) Pulp cap

40. If the perforation of the pulp chamber occurs during the removal of the decay the tooth can be considered for the vital pulp therapy. What vital pulp therapy procedure is recommended for this?

a) Indirect pulp cap c) Pulpotomy e) Apexification

b) Pulpectomy d) Direct pulp cap

41.To maintain the patency of canal , each canal should be instrumented uptil particular diameter. What is the recommended apical preparation diameter size for canines?

a) 35-60 c) 25-30 e) 40-80

b) 10-15 d) 60-80

42.Access cavity preparation is the initial step of root canal procedure.What is the primary function of creating access cavity?

a) Facilitate canal medication

b) Provide access for irrigation

c) Aid in locating canal orifice

d) Provide straight line access to the apex

e) Provide straight line access to the pulp horn

43.Canal orifices are located on the coronal end of root canal. What instrument is used for the location of root canals?

a) Probe c) Explorer e) Ultrasonic system

b) Files d) Broaches

44. ISO standardization has given the color coding to endodontic files. What color code is given to endodontic 30 K file.

a) White c) Purple e) Green

b) Blue d) Black

45. Endodontic files are made from stainless steel blanks. From which type of blank K- file is traditionally manufactured?

a) Rhomboidal c) Circular e) Spiral

b) Double helix d) Triangular

SEQ/SAQ

Questions	Marks
What are the different techniques of root canal preparation?	**3**

Key	Marks
ANSWER: **1.Step back technique** · Conventional step-back. · Passive step-back **2. Crown-down (step-down) technique.** · Crown-down pressure less. · Double flare. · Balanced force Hybrid technique	**3**

COGNITIVE LEVEL: Application
DIFFICULTY LEVEL: Easy
IMPORTANCE: Must Know
REFERENCE: Operative Dentistry by Marzouk.Chapter 8: Direct tooth colored restorations

OPERATIVE DENTISTRY

SEQs

TIME ALLOWED: 2Hr 15 min **Total Marks: 45**

Q1	**What are the methods to diagnose dental caries?**	**3**
Q2	**What is the classification of endodontic instruments?**	**3**
Q3	**What are the primary and secondary functions of intracanal medicaments?**	**3**
Q4	**What are the caries factors that affect the pulp dentin organ?**	**3**
Q5	**What are the clinical uses of Glass Ionomer cements?**	**3**
Q6	**Write down the different groups of Antiseptics. Discuss any one in detail**	**1,2**
Q7	**What are the steps of indirect pulp capping?**	**3**
Q8	**What is the difference between liners and bases?**	**3**
Q9	**What criteria is to be met before obturaion of root canal?**	**3**
Q10	**What are the different techniques for canal preparation? How will you prepare the canal using crown down technique?**	**2,1**
Q11	**What is the mode of sterilization for each?** **1. Bone grafts** **2. Gloves** **3. Plastic syringes** **4. Laboratories** **5. Wards** **6. Glass ware**	**0.5 each**
Q12	**What are the conditions in which direct pulp capping is indicated?**	**3**
Q13	**What are the factors that affect the retention of pin in pin-retained restoration?**	**3**
Q14	**What are the methods of determining the working length of root canal during RCT?**	**3**
Q15	**What is Auto matrix? Write down its advantages and disadvantages**	**1, 2**

TIME ALLOWED: 5 HOURS

LONG CASE: CLASS I AMALGAM RESTORATION

CLINICAL CRITERIA FOR MARKS DISTRIBUTION

GOALS

Cavity preparation according to GV black. Occlusal extensions must follow B/I grooves precisely (caries only) where fissure is converted into smooth surface. To carve and polish the joint of material and tooth surface, cavosurface angle 90 degrees at the cavosurface margin. Outline smooth curve following the anatomy of tooth, width should not be less than 1.5 mm and not more than 1/2 intercuspal, depends on caries extension, margins smooth and regular walls slightly convergent buccolingualy line angles rounded, depth of preparation should not be less than 1.5 mm and made according to the caries extension. Bevelling be placed such that accessible location for polishing. Deepened according to the extension and depth of caries. Finishing must be highly smooth with no roughness.

CASES WILL BE DISTRIBUTED RANDOMLY AMONGST ALL STUDENTS OF EACH GROUP

NUMBER	CLINICAL STEPS	CRITERIA FOR MARKS DISTRIBUTION	MARKS
1	Patient assessment	History, examination, diagnosis	2
2	Scrubbing/gloves wearing	Removal of jewelry, cleaning of under surface of nails, use antimicrobial agent/assistant, single hand or double hand technique of gloves wearing	1
3	Patient seating	Head rest, back rest, light, tray/chair positioning	1
4	Tray arrangements and selection of instruments	Arrangements of instruments in sequence and cleanliness	2
5	Treatment planning	According to the extension of the carious lesion keeping in mind the anatomy of the tooth structure	1
6	Rubber dam	No voids, no leaks, proper placement	2
7	Cavity preparation	According to the tooth anatomy(according to the extent of carious lesion, width, margins, walls, cavity depth, line angles, proximal box)	7
8	Lining/cement mixing on slab	Lining smooth, no voids, proper ratio and technique	2
9	Amalgam mixing	Ratio/ technique	3
10	Filling	Should restore the tooth anatomy, interproximal contact with adjacent tooth restore	2
11	Carving	Contours should be restored	2
	Table viva	Regarding the procedure performed	5
	Total		30

TIME ALLOWED: 5 HOURS

LONG CASE: CLASS II AMALGAM RESTORATION (PROXIMAL CAVITY)

CLINICAL CRITERIA FOR MARKS DISTRIBUTION

GOALS

Cavity preparation according to GV black. Occlusal extensions must follow B/I grooves precisely (caries only) where fissure is converted into smooth surface. To carve and polish the joint of material and tooth surface, cavosurface angle 90 degrees at the cavosurface margin. Outline smooth curve following the anatomy of tooth, width should not be less than 1.5 mm and not more than 1/2 intercuspal, depends on caries extension, margins smooth and regular walls slightly convergent buccolingualy line angles rounded, depth of preparation should not be less than 1.5 mm and made according to the caries extension. Bevelling be placed such that accessible location for polishing. Deepened according to the extension and depth of caries. Matrix must be placed over the margins Wedge compatible in size and shape to gingival embrasure the contouring must restore the tooth anatomy, restoring of proximal contact, proximal surface shaped such that finishing must be highly smooth with no roughness.

CASES WILL BE DISTRIBUTED RANDOMLY AMONGST ALL STUDENTS OF EACH GROUP

NUMBER	CLINICAL STEPS	CRITERIA FOR MARKS DISTRIBUTION	MARKS
1	Patient assessment	History, examination, diagnosis	2
2	Scrubbing/gloves wearing	Removal of jewelry, cleaning of under surface of nails, use antimicrobial agent/assistant, single hand or double hand technique of gloves wearing	1
3	Patient seating	Head rest, back rest, light, tray/chair positioning	1
4	Tray arrangements and selection of instruments	Arrangements of instruments in sequence and cleanliness	2
5	Treatment planning	According to the extension of the carious lesion keeping in mind the anatomy of the tooth structure	1
6	Rubber dam	No voids, no leaks, proper placement	2
7	Cavity preparation	According to the tooth anatomy(according to the extent of carious lesion, width, margins, walls, cavity depth, line angles, proximal box)	5
8	Lining/cement mixing on slab	Lining smooth, no voids, proper ratio and technique	2
9	Matrix band handling and wedge placement	Band should be adjusted to restore the proximal tooth structure/ wedge fits into the gingival embrasure	3
10	Amalgam mixing	Ratio/ technique	2
11	Filling	Should restore the tooth anatomy, interproximal contact with adjacent tooth restore	2
12	Carving	Contours should be restored	2
	Table viva	Regarding the procedure performed	5
	Total		30

TIME ALLOWED: 5 HOURS

LONG CASE: CLASS III & IV COMPOSITE RESTORATION (PROXIMAL FILLING)

CLINICAL CRITERIA FOR MARKS DISTRIBUTION

GOALS

Cavity preparation according to composite restorations, extensions must follow precisely (caries only) and Outline smooth curve following the anatomy of tooth walls smooth, line angles rounded axiopulpal line angle should be bevelled, depth of preparation made according to the caries extension, proximal surface shaped such that the gingivo cavosurface margin located on intact enamel above (dej), long or medium bevelled, beveling placed such that buccal and lingual walls in accessible location for polishing, adequate enamel left after bevelling. Matrix must be placed over the margins. Wedge must be compatible in size and shape to gingival embrasure, the contouring should restore the tooth anatomy, restoring of proximal contact, finishing must be highly smooth with no voids or roughness.

CASES WILL BE DISTRIBUTED RANDOMLY AMONGST ALL STUDENTS OF EACH GROUP

NUMBER	CLINICAL STEPS	CRITERIA FOR MARKS DISTRIBUTION	MARKS
1	Patient assessment	History, examination, diagnosis	2
2	Scrubbing/gloves wearing	Removal of jewelry, cleaning of under surface of nails, use antimicrobial agent/assistant, single hand or double hand technique of gloves wearing	1
3	Patient seating	Head rest, back rest, light, tray/chair positioning	1
4	Tray arrangements and selection of instruments	Arrangements of instruments in sequence and cleanliness	2
5	Treatment planning	According to the extension of the carious lesion keeping in mind the anatomy of the tooth structure	1
6	Rubber dam	No voids, no leaks, proper placement	2
7	Cavity preparation	According to the tooth anatomy(according to the extent of carious lesion, width, margins, walls, cavity depth, line angles, proximal box)	5
8	Selection of material	According to compatibility with tooth structure, aesthetic needs, caries index	2
9	Matrix band handling and wedge placement	Band should be adjusted to restore the proximal tooth structure/ wedge fits into the gingival embrasure	3
10	Shade assessment	Chroma, hue, translucency	1
11	filling	Should restore the tooth anatomy, interproximal contact with adjacent tooth restore	2
12	Polishing	Smooth finishing, no roughness	3
	Table viva	Regarding the procedure performed	5
	Total		30

TIME ALLOWED: 5 HOURS

LONG CASE: ROOT CANAL TREATMENT OF SINGLE ROOTED TEETH (SINGLE VISIT)

GOALS

Diagnosis, treatment planning, Selection of instruments in sequence Type of the instruments used, according to the anatomy of the canal, and in sequence, according to the technique used. Placement of rubber dam, proper length determination not crossing the apex or not too short, Materials used for irrigation and obturation hermelic scaling without any voids or leaks final evaluation of obluralion by radiographs.

CASES WILL BE DISTRIBUTED RANDOMLY AMONGST ALL STUDENTS OF LACH GROUP

NUMBER	CLINICAL STEPS	CRITERIA FOR MARKS DISTRIBUTION	MARKS
1	Patient assessment	History, examination, diagnosis	2
2	Scrubbing/gloves wearing	Removal of jewelry, cleaning of under surface of nails, use antimicrobial agent/assistant, single hand or double hand technique of gloves wearing	1
3	Patient seating	Head rest, back rest, light, tray/chair positioning	1
4	Tray arrangements and selection of instruments	Arrangements of instruments in sequence and cleanliness	2
5	Treatment planning	According to the extension of the carious lesion keeping in mind the anatomy of the tooth structure	1
6	Rubber dam	No voids, no leaks, proper placement	2
7	Access cavity preparation	According to the tooth and pulp anatomy	3
8	Exploring the canals	Orifice/canal	3
9	Length determination	Use of radiographs	2
10	Irrigation and preparation of canals	Instrumentation and irrigation	2
11	Obturation	Marginal/ methods of obturation	3
12	Final evaluation(radiographs)	Obturation with no leakage and voids, hermetic seal	3
	Table viva	Regarding the procedure done	5
	Total		**30**

CURRICULUM DETAILS

Curricular Framework including allocation of hours (PMDC)

BDS SCHEME OF STUDIES			
Basic Dental Sciences / Preclinical Year		**Clinical Dental Sciences / Clinical Years**	
1st Professional Year	**2nd Professional Year**	**3rd Professional Year**	**4th Professional Year**
Anatomy 300 Hours	**General Pathology** 220 Hours	**General Medicine** 180 Hours	**Operative Dentistry** 250 Hours
Physiology 300 Hours	**Pharmacology** 220 Hours	**General Surgery** 170 Hours	**Prosthodontics** 250 Hours
Biochemistry 180 Hours	**Science of Dental Materials** 300 Hours	**Oral Pathology** 180 Hours	**Orthodontics** 250 Hours
Oral biology & Tooth Morphology 300 Hours	**Community Dentistry** 200 Hours	**Oral Medicine** 150 Hours	**Oral & Maxillofacial Surgery** 250 Hours
General Education 120 Hours (Islamiat, Pakistan Studies Behavioural Sciences, Research, English, Arts & Humanities)	**Pre-clinical Operative Dentistry** 80 Hours	**Periodontology** 180 Hours	**Paediatric Dentistry** 100 Hours
	Pre-clinical Prosthodontics 80 Hours	**Clinical Operative** 80 Hours	**General Education** 100 Hours (Research, English, Arts & Humanities, ICT)
	General Education 100 Hours (Behavioural Sciences, Research, English, Arts & Humanities, ICT)	**Clinical Prosthodontics** 80 Hours	
		Clinical Oral & Maxillofacial Surgery 80 Hours	
		General Education 100 Hours (Research, English, Arts & Humanities, ICT)	
1200 hours	**1200 hours**	**1200 hours**	**1200 hours**

Curricular Map & Rationale

1. This pictorial, vertical and horizontal presentation of the course content and extent shows the sequence in which various systems are to be covered. Curricular map to cover all the subjects and modules and the time allocated to study of the systems for the undergraduate programs offered at four colleges at campus are as follows:

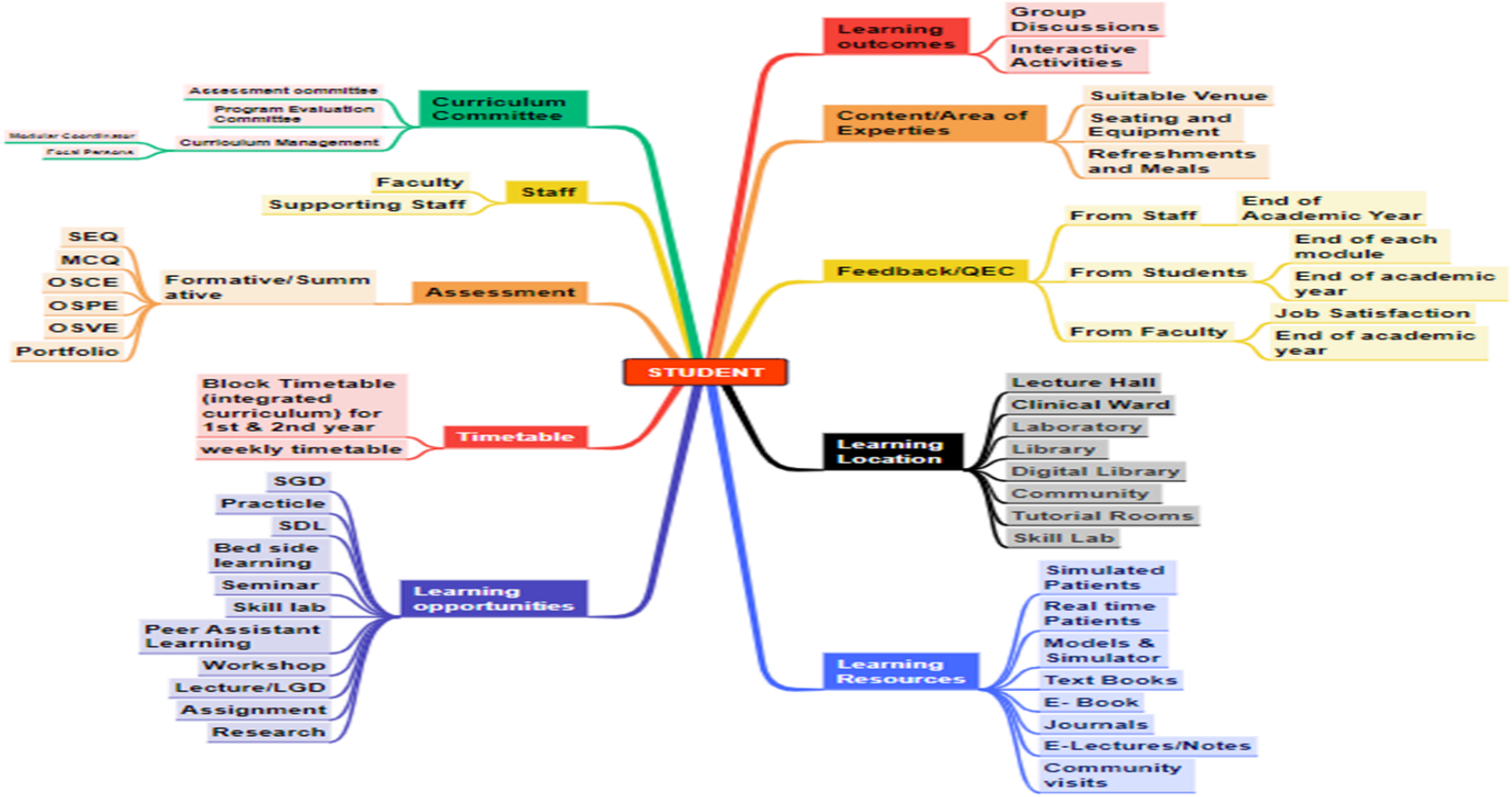


Table Of Specification

Unit/ Chapter	Topic/ Content	Learning Outcomes	Mode of Information (MOIT)	Learning Domain (KSA-Model)	Assessment Method (No. of Questions)			
					MCQS	SEQs	Viva	OSPE or Practical
Cariology	-Mechanism of caries -Classification of decay -GV Black classification of caries -Diagnosis of caries	By the end of this topic, students will be able to: ● define dental caries ● Identify the type of caries ● State the methods for caries diagnosis	Lecture	Knowledge	1	1		
Restoration / cutting bleaching	-GV black rules of cavity preparation (Class I,II,III,IV,V,VI) -Principles for fabricating direct tooth colored restorations -Pin retained restorations -Bleaching	By the end of this topic, students will be able to: ● Memorize the principles of cavity design ● List direct filling materials ● Describe the type of retaining pins for amalgam / direct tooth colored materials ● Identify anatomic aspects of pin retained restorations ● List the techniques of inserting pins ● Recall vital & Non vital bleaching procedures	Lecture	Knowledge	14	6		

Clinical dental materials	-Intermediary base materials -Glass Ionomer cements -Composites	By the end of this topic, students will be able to: ● Classify intermediary basis ● List materials used for basing ● Recall composition & setting reaction of GIC & composites ● List types of GIC & composite resins ● Outline clinical applications	Lecture	knowledge	3	1		
Crown & bridge	-Indications & contra indications of crown and bridge -Type of crowns & bridges -Designing and planning of crown & bridge -Components of bridge -crown & bridge failure	By the end of this topic, students will be able to: ● List indications & contraindications of crown & bridge ● Describe design of anterior & posterior crown ● Recall detailed planning of crown & bridge ● Outline planning stages for anterior & posterior ● List the components of bridge ● Define criteria for selecting a bridge	Lecture	Knowledge	11	3		

Paedodontics	-Principles of Paedodontics -Factors influencing child behaviour -Defects of teeth and tooth bearing structures -Modification of cavity design -Dental trauma	By the end of this topic, students will be able to: ● Describe principles of paedriatric dentistry ● List factors affecting parental attitude ● Identify factors influencing child behaviour ● Classify child behaviour ● Name techniques for behaviour management ● Identify clinical anomalies of enamel & dentine ● Match principles in cavity preparation in primary teeth in comparison to permanent teeth ● Classify the types of dental traumas	Lecture	Knowledge	4	2		
Endodontics (including surgical endodontics)	-Principles of endodontics -Pulp anatomy &access cavity preparation -Instruments in endodontics -Sterilization in endodontics Preparation & Instrumentation of	By the end of this topic, students will be able to: ● Describe the scope of endodontics ● Memorize access cavities of all teeth ● List instruments for root canal preparation ● Outline the devices to determine working length	Lecture	Knowledge	12	2		

	conventional root canal -Intracanal medicament -Obturation -Surgical endodontics	• Describe importance of sterilization • List types of sterilizations methods • Name types of antimicrobial agents • Recall materials used to obturate root canals • Recall indications of peri-radicular surgery • List surgical techniques						
Total					45	15		

CONSERVATIVE & RESTORATIVE DENTISTRY

1.	**Topic: Principles of Operative Dentistry**	**At the end of lecture students will be able to understand about:** **• About definition of Operative Dentistry** **• Scope of Operative Dentistry** **- DiAagnosis** **Location, Extent, Design of Tooth Preparation, Material** **- Prevention** **Location, Shape, Contour** **- Interception** **Stabilizing an active disease process to prevent further loss of tooth structure** **- Preservation** **Anatomy, Vitality** **- Restoration** **Health, Form, Function, Occlusal Stability, Phonetics, Aesthetics, Welfare of Patient, Artistic Knowledge, Manual Skill, Scientific Knowledge**

2.	**Topic: GV Black Rules of Cavity Preparation and Challenges to GV Black Rules**	**At the end of lecture students will be able to understand about:** **• GV Black's Principles of Cavity Designing (Restoration with Amalgam)** **- Tooth Morphology** **- Outline Form, Resistance Form, Retention form, Convenience Form, Removal of Caries, Extension for Prevention, - Debridement / Toilet of Cavity Preparation and maintaining the biologic Form** **• Requirements of Tooth Preparation** **• Clinician's challenge to GV Black Designing** **• Modern Concept regarding Cavity Design** **•Intracoronal tooth preparation features including, walls, floors, line angles, point angles, the cavosurface margins,cavosurface angle, bevelling and pulp protection** **•Extracoronal tooth preparation including preparation surface,finishing lines, cavosurface margins and external angles**

3.	**Topic: The Biologic Basis of the Pulp Dentin Organ as Related to Operative Procedures**	**At the end of lecture students will be able to understand about:** **• Physiologic Consideration** **- Dentin Sensitivity** **- Dentin Permeability** **- Dentinogenesis** **• Pathologic Considerations** **• Clinical Considerations** **• Anatomical and Histological Considerations** **• Direct Irritation to the Pulp Dentin Organ** **- Recessional Lines, Anatomy of the Pulp in Situ** **• Indirect Irritation to the Pulp Dentin Organ** **- Healthy Reparative Reaction, Un-Healthy Reparative Reaction, Destructive Reaction, Caries Irritation, Irritating Agents of Tooth Preparation** **• Irritating Factors to the Periodontium**

4.	**Topic: Dental Caries**	**At the end of lecture students will be able to understand about:** **• Physiologic Consideration** **- Dentin Sensitivity** **- Dentin Permeability** **- Dentinogenesis** **• Pathologic Considerations** **• Clinical Considerations** **• Anatomical and Histological Considerations** **• Direct Irritation to the Pulp Dentin Organ** **- Recessional Lines, Anatomy of the Pulp in Situ** **• Indirect Irritation to the Pulp Dentin Organ** **- Healthy Reparative Reaction, Un-Healthy Reparative Reaction, Destructive Reaction, Caries Irritation, Irritating Agents of Tooth Preparation** **• Irritating Factors to the Periodontium**

5.	**Topic: Pins and Post Retained Restorations**	**At the end of lecture students will be able to understand about:** **• Types of retaining pins for amalgam and direct tooth-colored materials** **• Pins and restorative materials** **• Anatomic aspects of pin retained restorations** **• Mechano-anatomical principles of pin placement** **• Post retained amalgam and direct tooth-colored restorations.** **root canal post sizes** **• Mechanical aspects of post retained restoration and foundation** **• Anatomical aspects of post retained restorations and foundations** **• Techniques of inserting pins**

6.	**Topic: Contacts and Contours**	**At the end of lecture students will be able to understand about:** **• Proximal contour, contact areas and related structures** **• Marginal ridges** **• Facial and lingual contours and related structures** **• Hazards of faulty reproduction of features of teeth in restoration** **• Procedure for formulation of proper contacts and contours** **- Tooth movement** **- Matricing** **- Types of Matrices** **• Evaluation of different matrix techniques**

7.	**Topic: Intermediatory Basis and Basing Cements**	**At the end of lecture students will be able to understand about:** **• Classification of Intermediatory Basis** **• Ideal requirements for Intermediatory Base Materials** **• Materials used for Basing** **- Zinc Oxide and Eugenol (ZOE)** **- Calcium Hydroxide** **- Zinc Phosphate Cement** **- Polycarboxylate Cement** **- Varnishes**
8.	**Topic: Glass Ionomer Cement**	**At the end of lecture students will be able to understand about:** **• History** **• Composition and setting reactions** **• Types** **• Clinical Applications**

9.	**Topic: Composites**	**At the end of lecture students will be able to understand about:** **• History** **• Composition and setting reactions** **· Composites resins** **Types of Composites resins** **-First generation composites, Second generation composites, Third generation composites, Fourth generation composites, Fifth generation composites, Sixth generation composites**

10.	**Topic: Direct Gold Restorations**	**At the end of lecture students will be able to understand about:** **• Types of Direct Gold Materials** **- Precipitated Gold** **- Gold Foil** **• Decontaminating and Degassing the Gold** **- By an Open Alcohol Flame** **- A Mica over a Flame** **- Electric Degassing** **• Condensation** **- Objectives for Condensation of Direct Gold Materials** **- Modes of Condensation** **- Gold Condensers** **- Principles of Condensation** **• Metallurgical and Mechanical Considerations of Direct Gold Restorations** **• Class I Cavity Preparation for Direct Gold Restorations** **• Class II Cavity Preparation for Direct Gold Restorations**

		• Class III Cavity Preparation for Direct Gold Restorations **• Class V Cavity Preparation for Direct Gold Restorations** **• General Steps for Insertion of Direct Gold Restoration in a Cavity Preparation**
11.	**Topic: Management of deep carious lesions**	**At the end of lecture students will be able to understand about:** **• Types and layers of dentinal carious lesions** **• Effect of caries on the P-D organ** **• The disinfection of dentin** **• Diagnosis and prognosis of deep carious lesion** **• Treatment of acute decay** **• Treatment of chronic decay** **• Indirect pulp capping and its dynamics** **• Direct pulp capping and its dynamics**

12.	**Topic:** **Non-Carious Destruction and Disfigurement of Teeth**	**At the end of lecture students will be able to understand about:** **• Attrition** **- Proximal Surface Attrition** **- Occluding Surface Attrition (Occlusal Wear)** **- Treatment Modalities** **• Abrasion** **- Causes** **- Clinical Signs and Symptoms** **- Treatment Modalities** **• Erosion** **- Factors causing Erosion** *** Ingested Acid, Salivary Citrates, Secreted Acids, Mechanical Abrasion, Chelating Microbial Metabolic Products, Acid Fumes, Excessive Tensile Stresses at the Tooth Clinical Cervix, Refused Acids, Salivary Flow, Treatment Modalities**

13.	**Topic: Pain Control for Operative Dentistry**	

		At the end of lecture students will be able to understand about: **• Objectives of Operative Dental Therapy** **• Pain due to Pulp Disease, Pulp Exposure, Hyperemia, Acute Pulpitis, Chronic Pulpitis, Pulp Gangrene, Pulp Necrosis, Pulp Concussion, Internal Resorption and Calcification** **• Pain due to Factors Effecting Enamel** **- Damaged Enamel** **- Shock from Dental Unit** **• Pain due to Factors Effecting Dentin** **- Pain in normal Teeth** **- Pain in Teeth with Disease** **- Pain in Restored Teeth** **- Sensitive Dentin** **- Sensitivity of Dentino Enamel Junction** **• Investigation of pain Causes** **- Site of Pain, Time of Pain, Frequency**

		of Pain, Intensity of Pain and Quality of Pain **• Vitality Test** **- Mechanical Stimulation, Application of Heat, Application of cold, Electric Test, Pain on Percussion, and Local Anesthetic Test.** **• External Stimuli Provoking Pain in Teeth** **- Thermal Stimuli, Osmotic Stimuli, Mechanical Stimuli and electrical stimuli.** **• Pain in Diseased Tooth** **Dental caries, trauma, Operative Procedures, Effect of Repeated Stimulation, - Effect of Cavity Depth, - Effect of Age, Effect of Secondary Dentin, attrition, abrasion, erosion** **• Pain in Dental Origin** **- Teeth, Pulp, Periodontal Origin, Pain due to factors in Jaws, Pain due to disturbance in Masticatory System, Soft Tissue Lesion, Trigeminal Neuralgia, Referred Pain, Atypical Facial Pain** **• Hyperalgesia** **- Chemical mediators of pain** *** Intra cellular Algo genic Substances** *** Extra cellular Algo genic Substances**

		• **Analgesics** • **Patient's Description of Pain** **- Intermittent mild** **- Intermittent severe** **- Constant mild** **- Constant severe**
14.	**Topic: Bleaching**	• **Nonvital bleaching procedures** • **In-office Nonvital bleaching technique** • **Walking bleach technique** • **Vital bleaching procedures** • **In-office vital bleaching technique** • **Dentist –prescribed ,Home-Applied technique (night guard vital bleaching)**

15.	**Topic: Principles for Fabricating Direct Tooth Colored Restorations**	**At the end of lecture students will be able to understand about:** **• Choice of direct filling material** **• Shade determination** **• Matricing** **• Dispensing of restorative material** **• Insertion & Curing** **• Margination** **• Finishing and Polishing** **• Glazing**

ENDODONTICS – LECTURES PLANNER

Sr #	Contents	Learning Objectives
1	Principles of Endodontics	At the end of lecture students will be able to understand about: • Scope of Endodontics • Role of Micro Organisms • Tissue response to Root Canal Infection • Diagnosis - History - Examination - Investigation - Differential Diagnosis

2	Pulp Anatomy and Access Cavity Preparation	At the end of lecture students will be able to understand about: • Nomenclature • Accessory and Lateral Canals • Location of Apical Foramina • Access cavities of - Maxillary Central & Lateral Incisors - Maxillary Canine - Maxillary First and Second Premolar - Maxillary First and Second Molar - Maxillary Third Molar - Mandibular Central & Lateral Incisors - Mandibular Canine
3	Instruments used in Endodontics	At the end of lecture students will be able to understand about: • Rubber dam and its application • Instruments for root canal prep - Hand instruments - Power assisted instruments - Rotary - Ni-Ti Hand piece and Motor Devices to determine Working Length Instruments for Filling Root Canal
4	Sterilization of Endodontic instruments	At the end of lecture students will be able to understand about: • Definitions - Sterilization - Disinfection

		- Antiseptic - Cross Infection Control • Why is sterilization Important in Dentistry? • Exposure Risks in Dental Operatory • Standard Precautions
5	Preparation and Instrumentation of Conventional Root Canal	At the end of lecture students will be able to understand about: • Gaining access to root canals - Pre-Treatment Assessment - Preparation of the Tooth - Removal of the Pulp Chamber Roof & Coronal Pulp Tissue - Creating Straight Line Assess • Working length determination • Root Canal Irrigation • Instrumentation Technique • Crown down Technique • Cleaning and shaping
6	Intracanal Medicaments Materials	At the end of lecture students will be able to understand about: • Microbiology of Endodontic Infections - Primary Root Canal Infection - Secondary Root Canal Infection - Persistent Root Canal Infection - Extra Radicular Infection • Antimicrobial Agents - Antibiotics - Disinfectants • Antibacterial Effect of Irrigation

7	Obturation	At the end of lecture students will be able to understand about: • Materials used to fill Root Canals - Sealers * Zinc Oxide Eugenol Sealers * Calcium Hydroxide Sealers * Resin Based Sealers * Glass Ionomers Sealers * Silicon Based Sealers - Gutta Percha * Canal Filling with Gutta Percha * Cold Gutta Percha Technique * Heat Softened Gutta Percha Technique * Solvent Softened Gutta Percha Technique * Silver Points to fill Root Canals
8	Surgical Endodontics	At the end of lecture students will be able to understand about: • Indications for Peri radicular Surgery • Pre-Operative Assessment • Surgical Technique • Repair of Perforation • Replantation / Transplantation • Regenerative Procedures
9	Problems in endodontic treatment	At the end of lecture students will be able to understand about: • Acute pulpitis and failure of anaesthesia in acute inflammation. -Alternative anaesthetic techniques • Problems with preparation of the root canal system

		-Access cavity preparation, problems with primary preparation of the root canal, root canal retreatment, ledges and blocked canals and hypochlorite accidents. • Problems with filling of the root canal system -Non-iatrogenic problems with root canal filling -Iatrogenic problems with root canal filling
10	Restoration of endodontically treated teeth	At the end of lecture students will be able to understand about: • Effects of endodontic treatment on the tooth • Survival of the endodontically treated teeth •Restoration choice for anterior teeth •Restoration choice for posterior teeth •Indications for posts •Clinical and technical aspects of post restoration
11	Pathologic Root Resorption	1. Internal & External Root Resorption b 2. Transient/Inflammatory Resorption 3. Treatment/Management
12	Endo-Perio Lesions	1. Clinical manifestations of Endo-Perio Lesions 2. Management

Crown & Bridge– LECTURES PLANNER

Sr #	Contents	Learning Objectives
1	Indications & Contra Indications for Crowns	At the end of lecture students will be able to understand about: • Indications of anterior & posterior crown - Badly Broken-Down Teeth, Primary Trauma, Tooth Wear, Hypoplastic Conditions, To alter the shape, size or inclination of teeth, To alter the occlusion,

		To alter the shape, size or inclination of teeth, As part of another restoration, Combined Indications, Multiple Crown and Appearance • Alternative to anterior crown - Internal Bleaching, external Bleaching, Composite Restorations and Porcelain Veneers. • Alternative to posterior crown - Bonded or Pin Retained Amalgam Restorations, Composites and Gold Inlays, Onlays Protecting Weak Cusps, Bonded or Pin Retained Amalgam Restorations and Ceramic Inlays and Onlays
2	Types of Crowns (Anterior Complete Crowns)	At the end of lecture students will be able to understand about: • Anterior complete crowns for vital teeth - Ceramic crowns *Traditional fused porcelain jacket crowns (PjCs) * Cast crowns * Ceramic resin bonded crowns * Choosing between Ceramic crowns * Advantages and Disadvantages of Ceramic Crowns - Metal-ceramic crowns * Advantages and Disadvantages of Ceramic Crowns - Other types of crowns • Anterior crowns for root filled teeth - Composite & Glass Ionomer Core and crown - Post and Core and separate crown
3	Types of Crowns (Posterior Complete Crowns)	At the end of lecture students will be able to understand about: • Posterior complete crowns - Cast Metal crowns Advantages and Disadvantages - Metal ceramic crowns

		Advantages and Disadvantages - Ceramic crowns • Posterior Partial Crowns - Three Quarter Crowns - Half Crown • Cores of Amalgam, Composite and Glass Ionomer Cement for Posterior Crowns
4	Designing Crown Preparations	At the end of lecture students will be able to understand about: • Principles of Crown Preparations - Related to Materials - Related to Functions - Related to Appearance - Related to Adjacent Teeth - Related to Periodontal Tissues - Related to the Pulp • Designing of Anterior and Posterior Crowns • Avoiding failures from other causes
5	Considerations in Crown Preparation	At the end of lecture students will be able to understand about: • Analysis, examination and objectives of occlusion • Occlusal interferences and harmony - Premature contact - Occlusal vertical dimension (OVD) - Creating inter occlusal space for teeth to be crowned - Temporomandibular dysfunction (TMD) • Occlusal adjustments prior to tooth preparation • Occlusal objectives in making crown and bridge • Clinical and Lab management of the occlusion

6	Planning and Making Crowns	At the end of lecture students will be able to understand about: • History and examination - Of the whole patient - Of the mouth in general - Of the individual tooth • Decisions to be made (Tooth to be kept or extracted) • Detailed planning of the crown - Appearance - Choice of type of crown, including material - Detailed design of the preparation • Planning and executing the clinical and laboratory stages
7	Clinical Techniques for Making Crowns	At the end of lecture students will be able to understand about: • Planning stages for anterior and posterior tooth preparation - Study casts, Photographs, Trial preparations, Appearance, The final impression and The temporary crown • Tooth preparation of posterior crown - Choice of instruments, Occlusal reduction, Axial reduction, Mesial and distal surfaces preparation and finishing • Tooth preparation of complete anterior crown - Incisal and Proximal reduction, labial reduction, Gingival-palatal reduction, Incisal palatal reduction and finishing. • Temporary crowns • Impression Materials and Techniques

8	Indications, Advantages and Disadvantages of Bridges	At the end of lecture students will be able to understand about: • Indications and contraindications • Advantages of bridges - Appearance, Ability to Eat, Occlusal Stability, Speech, Periodontal Splinting, A Feeling of Completeness, Orthodontic Retention, Restoring Occlusal Vertical Dimension, Wind Instrument Players • Disadvantages of Replacing Missing Teeth - Damage to Tooth and Pulp, Secondary Caries, Failure, Effects on the Periodontium, Cause and Discomfort • The choice between fixed and removable prostheses - Patient Attitude, age and sex, confidence, appearance, general health and appearance
9	Types of Bridges	At the end of lecture students will be able to understand about: Basic Designs of Bridges • Fixed-fixed bridge • Fixed movable bridge • Cantilever bridge • Spring cantilever bridge • Combination designs • Hybrid design • Choice of materials - Metal only - Metal-ceramic - Ceramic only - Combination of materials

10	Comparison of Bridges	At the end of lecture students will be able to understand about: • Comparison of conventional bridge design - Advantages and Disadvantages of Fixed- Fixed Bridge - Advantages and Disadvantages of Fixed Movable Bridge - Advantages and Disadvantages of Cantilever Bridge • Comparison of minimal preparation bridge design - Advantages and Disadvantages of Fixed- Fixed Bridge - Advantages and Disadvantages of Fixed Movable Bridge - Advantages and Disadvantages of Cantilever Bridge
11	Components of Bridges	At the end of lecture students will be able to understand about: • Retainers - Major or Minor Retainer • Criteria for choosing a suitable Retainer - Appearance - Condition of Abutment Teeth - Conservation of Tooth - Alignment of Abutment Teeth & Retention Tissue - Occlusion - Cost • Pontics - Principles of Design * To restore the Appearance * Stabilize the Occlusion * To Improve Masticatory Function • Connectors - Fixed Connectors

		* Cast Connectors * Soldered or Laser Welded Connectors * Porcelain Connectors * Movable Connectors
12	Designing and Planning of Bridges	At the end of lecture students will be able to understand about: • Criteria for selecting a bridge - Support - Conservation of Tooth - Cleanability - Appearance - Consideration of the whole Patient - Clinical Examination - Assessing Abutment Teeth - Length of Span - Occlusion - Shape of Ridge - Study Casts • Design of various component parts • Abutment and retainer selection • Marginal placement and pontic designs
13	Clinical Techniques for Bridge Construction	At the end of lecture students will be able to understand about: • Occlusal Adjustment • Abutment preparation • Choice of material and technique • Lab procedures • Trial of bridge framework and cementation • Oral hygiene instructions and maintenance

14	Crown and Bridge Failure and Repairs	At the end of lecture students will be able to understand about: • Causes - Mechanical failure - Changes in the abutment tooth - Design failure - Marginal deficiencies - Poor shape and color - Occlusal problems • Techniques for adjustments, adaptations and repairs to crown and bridge
15	Dental Ceramics	At the end of lecture students will be able to understand about: • Classification of Dental Porcelain - High Fusing, Medium Fusing, Low Fusing, Aluminous Porcelain, Feldspathic, Ceramics, Quartz, Aluminum, Kaolin, Fritting, Opaque Porcelain, Body Porcelain, Body Modifiers, Stains and Glazes • Requirements of a Porcelain for bonding to metal - Two special features - High coefficient of thermal expansion - Fuse (Melt) • Non-Discoloring (Non-Greening Dental Porcelains)

PAEDODONTICS- LECTURE PLANNER

Sr	CONTENT	LEARNING OBJECTIVES
1	Principles of Paedodontics/ Parent & Patient Management in Dental Office	At the end of lecture students will be able to understand about: • Principles and Considerations of Pediatric Dentistry - Quality, Comfort, Motivation, Satisfaction and Anxiety and Fear - Influence on the dentist - Influence on the dental staff - Influence on the child - Influence on the parents • Factors affecting parental attitude - Age, Emotional stability, Education, marital status, Cultural and ethnic factors, Socio-economic factors, Past medical and dental history and Influence of dentist, staff & environment.
2	Factors Influencing the Child Behavior	At the end of lecture students will be able to understand about: • Factors influencing child behavior - Stages of Development * The infant, 2years old, 3years old, 4years old, 5years old, 6years old, 7 to 12years old and the teenagers

		• Factors outside the control of Dentist - Past medical and dental history, Influence of parents, Sibling relationships, Peer influences, School influences and illness • Factors within Dentist Control - Office Environment; Child Oriented, color, odors, cleanliness, use of gifts, Location and design of equipment, Dentist, Dental Staff, Scheduling of an appointment, Orientations, Parental considerations and Office organization
3	Child Behavior and Personality	At the end of lecture students will be able to understand about behavior of child at • First 3 Years of age • The Second 3 Years • Age 6 - 12 (grade school) • Age 12 - 18
4	Basic Techniques of Behavior Management	At the end of lecture students will be able to understand about: • System of classifying children behavior

		- Cooperative - Lacking cooperative capability - Potentially un-cooperative behavior • Basic techniques of Behavior Management - Nonpharmacological Management * Conditioning, Reconditioning, Uncontrolled Behavior, Defiant Behavior, Timid Behavior, Tense Cooperative Behavior, Whining Behavior, restraint - Pharmacological Management * Premedication and The role of General Anesthesia • Classification system for parental behavior - Cooperative, Potentially cooperative and Limited cooperative
5	Development of Positive Behavior (The Initial Visit)	At the end of lecture students will be able to understand about: • Development of positive behavior patterns - The initial visit * Purpose, Medical history, Dental history, General family history and establishing the role of parents - Techniques of seating and introduction * Children of over three years of age

		* Children of under three years of age - Examination and Radiographic Techniques * Children of over three years of age * Children of under three years of age * Behavior Assessment, Preliminary consultation and Diagnosis and treatment planning.
6	Development of Positive Behavior (Preventive and Restorative Visit)	At the end of lecture students will be able to understand about: • The Preventive Visit - Objectives, Elimination of etiological factors, Preparation of child, Behavior re-assessment and Parental Consideration • The Treatment Plan - Establishing the objectives - Selection of mode of treatment and -Sequence of treatment - Length of visit • The first Restorative Visit - Significance, The role of the parent, Local anesthetic technique, Rubber Dam Technique, Behavioral Reassessment

7	Management of Handicapped Patient	At the end of lecture students will be able to understand about: • Intrinsic Handicapped and Extrinsic Handicapped • Common Dental Diseases in Handicapped Patient - Poor Oral Hygiene, Prevalence of Periodontal Diseases, Rampant Caries, Developmental Anomalies, Traumatic Injuries and Malnutrition Disorders • Assessment and Treatment Planning - General Considerations, Specific Management and Patience Screening • First Visit to Dentist - Patient Medical Status, Schedule Appointments and Living System • Radiographic Techniques, Preventive Dentistry • Management of Medically and developmentally Compromised Patient
8	Preventive Dentistry for Children	At the end of lecture students will be able to understand about: • Principles of Prevention Caries • Pre and Post Natal Counselling for Prevention

		- Rationale, Methodology and follow-up • Mechanical Removal of Plaque - Making Plaque Visible - Improving the Visibility in the Mouth - Devices and methods • Development of the Tooth Cleaning Habit • Fluoride Therapy - Rationale, Systemic Fluorides and Topical Fluoride Therapy • Mechanical Alteration of Tooth Surfaces - Occlusal Sealants, Removal of the Substrate, Role of Sugar in Bacteria Metabolism, Early Infant Feeding Habits, Dietary Habits & Physical Properties of Food and counsel
9	Modification of Cavity Preparation and Restorative Material in Paedodontics (Anterior teeth)	At the end of lecture students will be able to understand about modifications of cavity preparation and restorative material in: • Primary Cuspids

		• Maxillary and Mandibluar Primary Cuspids • Maxillary and mandibular Primary Incisors • Instrumentation (Class I, II, III and V Preparations) • Matrix Bands • Restorative Procedures for Primary anterior Teeth with Proximo-incisal Caries - Acrylic and Composite Resins, Poly Carbonate Crowns, Stainless Steel Crowns and Orthodontic Bands • Stainless Steel Crowns - Indications, tooth Preparation, Crown Selection, Contouring & Cementation • Acid Etch / Resin Techniques - Methods of Retention (Undercuts and Pins) • Acid Etch / Acrylic Resin/composite resin and its technique
10	Modification of Cavity Preparation and Restorative Material in Paedodontics (Posterior teeth)	At the end of lecture students will be able to understand about: • Isolation Techniques (The Rubber Dam) - Equipment, Materials and technique for Rubber Dam Placement • Principles of Cavity Preparation in Primary Teeth (Amalgam Alloy Restorations)

		• Maxillary First Primary Molar - The Cavity (Internal Form) and occlusal outline - Disto-occlusal cavity in Maxillary First Primary Molar • Mandibular First Primary Molar - Distal and mesial Pit Cavities - Disto-occlusal cavity in Mandibular First Primary Molar • Maxillary Second Primary Molar - Mesial & Central Pit Cavities and Mesio Occlusal Cavity in the Maxillary Second Primary Molar • Mandibular Second Primary Molar - Mesio Occlusal Cavity in the Mandibular Second Primary Molar
11	Defects of Teeth and Tooth Bearing Structures (Clinical Aspects of Enamel Deformation)	At the end of lecture students will be able to understand about: • Clinical anomalies of enamel - Environmental Defects - Traumatic Defects - Inflammatory and Infectious Defects

		- Chemical and Metabolic Defects - Hereditary Defects - Inherited Defects * Hypoplasia, Hypocalcification, Hypo maturation
12	Defects of Teeth and Tooth Bearing Structures (Clinical Aspects of Dentine Deformation)	At the end of lecture students will be able to understand about: • Clinical anomalies of Dentine - Environmental Defects - Inflammatory and Infectious Defects - Chemical and Metabolic Defects - Hereditary Defects - Defects in Dentin accompanied by a general disorder • Primary Defects in Tooth Germ - Axial core defects - Taurodontism - Hypodontia - Supernumerary Teeth
13	Dental Trauma (Classification of Injuries to Teeth)	At the end of lecture students will be able to understand about:

		• Examination of the Injury - Cleanup Soft Tissue Damage - Asses Hard Tissue Damage - Asses the General Condition of the Mouth - Examination of the Tooth * Visual - Type and Extent of Injury - Discoloration * Radiological * Digital - Test for Mobility of Crown or the Whole Tooth * Vitality Test * Percussion
14	Dental Trauma (Treatment of Class I)	end of lecture students will be able to understand about: • Class I Trauma

		- Treatment Planning * Possibility to Save the Tooth * Final Restoration of Tooth - Typical Restoration - Post Crown - Jacket Crown • Fracture Involving Enamel • Fracture Involving Enamel and Dentin • Factors to consider Crown need to be restored or not - Tooth still sensitive to thermal changes - Insufficient Crown to Prevent Drifting of Adjacent Teeth - Loss of Lip Control (Proclination) - Over Eruption of Lower Incisors - Appearance
15	Dental Trauma (Treatment of Class II, III, IV, V, VI, VII, VIII)	At the end of lecture students will be able to understand about:

		• Fracture Involving the Pulp - Apex Closed * Pulpectomy and Root Filling - Apex Open * Pulpotomy • Technique for Pulpotomy • Root Fractures - Coronal Third of Root - Middle Third of Root - Apical Third of Root • Class 4 - Management of Non-Vital Teeth with Open Apices * First Visit * Subsequent Visit • Class 5 - Tooth Totally Dislocated

		• Class 6 - Tooth Mobile plus Root Fracture • Class 7 - Tooth Mobile (No Displacement) - Tooth Moderately Mobile - Tooth Partially Dislocated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