



2024

Ethiopian Health Professionals Licensing Examination(EHPLE)

INFORMATION BOOKLET

DENTAL MEDICINE



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MINISTRY OF HEALTH - ETHIOPIA

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HEALTH CARE SERVICES FOR THE PEOPLE



Institute of
Educational Research

Message From the State Minister, Ministry of Health -Ethiopia



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Improving healthcare quality is a global priority for sustainable development, with high quality healthcare being a key component of universal health coverage. One strategy to maintain health care standards is through provision of health professional competency assessment. Consequently, in 2019, the Ministry of Health Ethiopia, initiated the Ethiopian Health Professionals Licensing Examination (EHPLE) for undergraduates in seven health disciplines, which has since expanded to include 13 health disciplines.

The main goal of this competency assessment is to identify health professionals with minimal competencies necessary to perform their duties safely and competently, thus enhancing the quality of health care services. This initiative is overseen by a dedicated Health and Health Related Institutions and Professionals' Regulatory Lead Executive Office (LEO), comprising four desks, which plays a pivotal role in strengthening the system and enabling the LEO to conduct the competency exam more extensively and with improved organization and quality.

It is important to note that this competency assessment differs significantly from traditional academic or employment examinations. Hence, this information booklet has been created to address the informational needs of both examinees and teaching faculty regarding the Ethiopian Health Professionals' Licensure Examination. Additionally, it aims to facilitate the assessment process, while promoting transparency and ensuring the sustainability of the program.

The preparation of this guideline involved the collaboration of esteemed experts from various higher education institutions, AAU-IER, the Ministry of Health, JHPIEGO-Ethiopia, Amref/HWIP, Health Professionals' Associations, and the Ministry of Education. Their invaluable contributions are acknowledged with sincere gratitude, alongside appreciation for the Ministry of Health staff for their unwavering commitment and hard work throughout the project.

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This Information Booklet for Ethiopian Health Professional's Licensing Examinations is a contribution from several educators, researchers, students and concerned individuals with a genuine interest to propel Ethiopia's medical and health sciences education forward.

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Acronyms and Abbreviations

EHPLE	Ethiopian Health Professionals Licensing Examination
ETA	Educational and Training Authority
HEIs	Higher Education Institutions
HHrIPR-LEO	Health and Health-related Institutions and Professionals Regulatory Lead Executive Office
HSTP-II	Health Sector Transformational Plan-II
MCQ	Multiple Choice Question
MoH	Ministry of Health
WHO	World Health Organization



Purpose of the Information Booklet

The Ethiopian Health Professionals' Licensing Examination (EHPLE) Information Booklet serves as a comprehensive guide for those individuals seeking information about the exam. It typically outlines basic information for candidate registration, exam development and administration processes and procedures, result notification, and the licensing process. It also includes information on the exam framework, i.e., the exam domain, sub-domain, content, process, and task, with sample exam items specific to each profession.

The publication of this Booklet is crucial for the following reasons:

- **Clarity and guidance:** It provides clear information about the exam by ensuring candidates understand the necessary information to prepare them.
- **Accessibility:** It serves as a readily accessible resource for individuals pursuing to take the exam, consolidating essential information in one document and facilitating easy access to necessary details. It also helps other stakeholders who might be interested in such resources.
- **Transparency:** It promotes transparency in the examination process and fosters trust among stakeholders about the exam.

In summary, the publication of this Booklet is essential for creating a transparent, standardized, and accessible framework that guides candidates through the EHPLE process.

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Definition of terms

- **Domain:** a broad category or area of knowledge or skills of a profession
- **Sub-domain:** a subset of a broader domain that focuses on knowledge or skills related to the overarching domain
- **Content:** a more specific subcategory, which is a breakdown of the sub-domain
- **Task:** the responsibility, knowledge, skill, and attitude of a junior undergraduate professional in an actual work environment
- **Process:** a systematic sequence of steps or actions designed to achieve a specific outcome
- **Learning outcome:** a clear and measurable statement that describes what the examinee is expected to know or be able to do
- **Relative emphasis:** the proportional importance or weight assigned to different content areas or categories within the assessment
- **Item:** a particular multiple-choice question
- **Item developer:** a subject matter expert responsible for writing test items or questions that make up the examination
- **Item reviewer:** a subject matter expert responsible for reviewing and refining the test items or questions that make up the examination
- **Standard setting:** a process of determining a cut-off point or passing score for an exam
- **Item difficulty index:** a statistical measure that indicates the proportion of examinees who answered a particular test item correctly
- **Discrimination index:** a statistical measure that evaluates how well a particular test item differentiates between high-performing and low-performing examinees
- **Admission paper:** a printout paper generated by the system after completing registration that contains the examinee's photo, QR code, and necessary information

1. Introduction

1.1. Background

Competency assessment is one of the strategies for controlling the standard of healthcare services provided in healthcare facilities. The World Health Organization (WHO) recommends all healthcare professionals to have necessary competencies. In Ethiopia, the Health Sector Transformational Plan-II (HSTP-II) states competency assessment of all graduates before joining the health workforce as one of the strategic initiatives.

The Ministry of Health (MoH) launched the Ethiopian Health Professionals Licensing Examination (EHPLE) for undergraduates in 2019. The Health and Health-related Institutions and Professionals Regulatory Lead Executive Office (HHrIPR-LEO) of the Ministry of Health was given a mission to implement the ministry's objective to achieve competency-related goals. It has the responsibility to ensure that the EHPLE meets technical, professional, and legal standards, and to protect the health, safety, and welfare of the public by assessing candidates' abilities to practice competently.

Currently, the exam is given for 13 health professions (Medicine, Nursing, Public Health, Pharmacy, Medical Laboratory Science, Anesthesia, Midwifery, Dental Medicine, Medical Radiology Technology, Environmental Health, Psychiatric Nursing, Pediatric and Child Health Nursing, and Emergency and Critical Care Nursing). Since its introduction until February 2024, a total of 166293 examinees took the exam in 14 rounds.

1.2. The Rationale of EHPLE

One of the critical functions of the MoH is to guarantee the efficiency, quality, and equity of healthcare delivery and to protect the public from any undesirable consequences in healthcare delivery practices. As professionals' competence is a significant determinant of the quality of health, evaluation of health professionals' competence has now been given due attention. The licensing examination for health professionals serves as a crucial step to ensure that individuals entering the field meet specific competency standards. The sole aim of the competency assessment is to safeguard public health by verifying that health professionals have the minimal basic knowledge, attitude, and skill required to provide safe and effective care.

Licensing exams act as a preventive measure, ensuring that only competent professionals join the health workforce, which, in turn, contributes to reducing the occurrence of medical errors and enhancing overall patient safety. By setting standards through examinations, regulatory bodies strive to minimize the risk of medical errors caused by incompetence.

2. Key processes of EHPLE

EHPLE involves several key processes to ensure the quality and reliability of the examination.

2.1. Registration of candidates

EHPLE has a mandatory online registration system for both new and repeat candidates, which can be found at www.hple.moh.gov.et

Please note these important notes during registration.

New Test Takers:



- The list of eligible candidates from governmental and private Higher Education Institutions (HEIs) will be sent from Ministry of Education (MoE) to MoH and uploaded to the online registration system by MoH.
- Once the name of the candidate is uploaded to the system and registration has opened for the current exam round, the candidate must register at www.hple.moh.gov.et by uploading the necessary documents listed below.
 - ✓ a scanned original or temporary degree
 - ✓ a scanned government-issued ID, passport, driving license, or any other legal ID
 - ✓ a passport-size photo of the candidate
 - ✓ For international candidates:
 - Equivalence document from ETA
 - Completing an externship attachment according to assignment by the regulatory body
 - Externship attachment completion letter

Repeat Test Takers:



- Since the information about re-exam candidates already exists in the system, the candidate should register by directly going to www.hple.moh.gov.et. There is no need for re-exam candidates to upload their documents.

Both new and repeat candidates:



- After completing the registration, the candidate must download and print the admission paper by logging into his/her account using his/her email address and password
- The candidate can change the exam center by logging into his/her account only during the registration period
- Once an examinee has selected his/her exam center during the registration period, an application for center change will not be allowed

2.2. Task Analysis

The first step of exam development involves conducting a comprehensive task analysis study, which identifies the tasks, knowledge, skills, and abilities required from a junior undergraduate professional in the specific profession. The analysis is typically done through surveys, interviews, or observations of practitioners in the actual work environment, as well as through the Delphi method with subject matter experts.

2.3. Exam Blueprint

Based on the task analysis findings, a test blueprint is created that outlines the content areas to be covered in the examination and the weight or emphasis given to each area. This ensures that the exam reflects the key competencies and knowledge needed for competent practice in that specific profession. Blueprint or test specification is the matrix or chart that shows the number and type of test questions represented across the topics in the content area, consistent with the learning outcome and relative weight of the test given to each content area. The blueprint also identifies the percentage weighting of cognitive dimensions as the level of competence tested in each knowledge domain.

Key components of a blueprint are:

- Domain
- Sub-domain
- Content
- Task
- Process
- Learning outcome
- Assessment methods
- Assessment tools/instrument (test format)
- Relative emphasis (in percentage)

2.4. Item Development

The items are developed following specific guidelines to ensure clarity, relevance, and fairness. Subject matter experts with experience in the field are selected from HEIs to develop test questions (items) that align with the test blueprint. The exam questions will focus mainly on “knows how” according to the competency level of the Miller's pyramid. The items are produced in a secure location on designated computers that are free from internet connectivity. The items are scenario-based and constructed with stem, lead-in, and four options/alternatives. All items will have a single-best-answer type of Multiple Choice Question (MCQ) that addresses the learning outcome defined in each content area. Standard text books, updated guidelines, and standards are used as reference materials.

2.5. Item Review

Once developed, the items undergo a rigorous review process by item reviewers. The main purpose of the exam review process is to evaluate content relevance, technical accuracy, clarity, and sensitivity related to culture and religion. More experienced subject matter experts as well as psychometric experts will do the review to ensure the items meet psychometric standards. Subject matter experts shall review the items to confirm that they are accurate, clearly stated, and correctly keyed using the checklist. Psychometric experts shall reviews the items to ensure that they are not technically flawed. They also work on editorial review to check grammar, punctuation, and spelling errors. This helps ensure the reliability and validity of the items.

2.6. Standard setting method

The standard setting or cut-off point of the EHPLE is determined using the Modified-Angoff method, which is one of the most widely used and legally defensible standard setting approaches to set a cut-off point for high-stake competency examinations.

The method involves a panel of subject matter experts who evaluate each test question and then estimate the probability that a minimally competent examinee would answer each test item correctly. The average of the experts' predictions for a test question becomes its predicted difficulty. The average of the predicted difficulty values across all items on a test is the recommended cut-off point. This point indicates the minimum level of knowledge and skill required to pass.

2.7. Exam Administration

The EHPLE is administered following established protocols and guidelines. Proper test administration procedures, appropriate security measures, and appropriate consideration for test-takers who need special support will be applied during exam administration at exam centers. The exam is administered in selected HEIs nationally, where candidates can choose based on their convenience at the time of registration. The exam schedule will be posted ahead of time on the MOH website and official Facebook page. Examinees who have a valid admission paper are eligible to sit for the exam. The mode of exam administration is computer-based testing.

CAUTIONS

- Candidates are allowed



- Attend the orientation session in order to sit for the exam
- Arrive at the exam center on time
- Bring a legal ID and admission paper
- Complete the exam within the allotted time frame

➤ Candidates are **NOT** allowed



- To bring reference materials, blank paper, or notes into the exam center
- To smoke, eat, or drink in the exam room
- To bring mobile phones, tablets, smart watches, camera devices, eyeglasses, calculators or any type of electronic device into the exam center
- To bring their personal belongings to the exam center
- To bring weapons and sharp materials into the exam center
- To give or receive assistance to or from other candidates during the examination

2.8. Scoring and post exam analysis

Once the exam is completed, the scoring process begins. The exam scoring process involves computerized scoring using software.

Post-exam analysis is the process of analyzing examinees' responses to individual test items in order to assess the quality of the items and the exam as a whole. This phase helps to identify any poorly performing items that may need revision or removal from the exam. The item difficulty index, discrimination index, and reliability coefficient are elements of exam analysis.

2.9. Result notification and appeal management

After scoring and analysis, individual score reports are generated and provided to examinees through the website www.hple.moh.gov.et. After result notification, examinees can submit their appeal through phone or email within 10 working days after result notification.

2.10. Licensing

The list of examinees who passed the exam will be sent to regional and city administration regulatory bodies. A license is obtained from the regional/zonal health bodies where he/she permanently lives.

Requirements for professional licensing are:



- Passing the EHPLE
- Original or temporary degree
- Educational documents (10th and 12th certificates)
- Medical certificate
- Government issued ID
- Additional prerequisites based on the requirements of regional regulatory bodies

3: Exam Framework

The key broader professional roles, also known as domains or main knowledge areas serve as a building framework for the licensing examination content for Dental Surgeons. The domains are further divided into discrete professional attributes that constitute sub-units (also referred to as sub-domains) defining the professional identity of Dental Surgeons. Tasks specifying the performance level of each sub-domain serve as the final characteristic of the professional duties on which the licensing exam focuses.

The contents of the licensing examination are presented below, structured into key roles (domains), sub-units (sub-domains), and tasks. The examination emphasis for each domain and sub-domain, out of the total 100% questions, is indicated in brackets.

Key professional roles/ domains

- ☐ Patient Care (82.5%)
- ☐ Scholar (4.0%)
- ☐ Professionalism (4.0%)
- ☐ Leadership and management (5.0%)
- ☐ Health promotion and disease prevention (4.5%)

Key role/ domain 1: Patient care roles/ domains (53.0%)

Description: This domain encompasses the professional roles of Dental Surgeons in the provision of high-quality, safe, and patient-centered care within their scope of practice. The provision of up-to-date, ethical, and resource-efficient care requires the application of integrated knowledge of biomedical, clinical, behavioral, and social sciences in all areas of Dentistry. As patient care providers, Dental Surgeons shall collect and interpret information, make clinical decisions, carry out diagnostic and therapeutic interventions, and evaluate interventions. To demonstrate competence in this domain, candidates shall apply such integrated knowledge in the following sub-areas:

- ☐ Prosthodontics (5.0%)
- ☐ Orthodontics (5.0%)
- ☐ Endodontics (8.0%)
- ☐ Restorative (6.0%)
- ☐ Oral medicine (8.0%)
- ☐ Pediatric dentistry (8.0%)
- ☐ Periodontology (7.0%)
- ☐ Oral and Maxillofacial surgery (29.0%)
- ☐ Oral Radiology (2.0%)
- ☐ Interdisciplinary (4.5%)

Key role/ domain 2: Scholar (4.0%)

Description: This domain encompasses the professional roles of Dental Surgeons in generating and utilizing scientific data to improve the health and well-being of the community and broaden their scientific knowledge within the healthcare system and community setting. Providing this service requires the application of integrated knowledge in research methods, measurements of health and disease, biostatistics, epidemiology, clinical audit, evidence-based practice, and research ethics. To demonstrate competence in this domain, candidates must possess applied knowledge in planning, problem identification, data collection, analysis, interpretation, report write-up, and dissemination of research outputs.

Key role/ domain 3: Professionalism (4.0%)

Description: This domain encompasses the professional commitment of Dental Surgeons to promoting the health and well-being of individuals and society through adhering to ethical standards, maintaining personal integrity, and upholding high standards of competence in all areas of practice. To exhibit competence in this domain, candidates must possess applied knowledge of ethical principles, medico-legal practices, effective communication, accountability to the profession and society, maintenance of professional excellence and personal health, and professional values such as compassion, respect, integrity, honesty, altruism, and humility.

Key role/ domain 4: Leadership and Management (5.0%)

Description: This domain encompasses the professional roles of Dental Surgeons in envisioning a high-quality healthcare system through self-awareness, active participation in healthcare teams, leading teams, and managing health systems. Providing this service requires the application of integrated knowledge in continuous quality improvement, effective health system leadership, management, and healthcare ethics. To demonstrate competence in this domain candidate shall possess applied knowledge to plan, organize, staff, lead, execute, monitor, and control healthcare resources and activities.

Key role/ domain 5: Health Promotion and Disease Prevention (4.5%)

Description: This domain encompasses the professional roles of Dental Surgeons in enhancing the health and well-being of patients, communities, and the larger populations they serve through health advocacy, disease prevention, health promotion and the promotion of health equity. Providing this service takes an integrated understanding of determinants of health, health informatics, epidemiology, communicable disease control, and health education.

Table 1 Exam content for the Dental medicine profession

Domain 1: Patient care	
Sub-Domains	Tasks
Prosthodontics	Assess diagnose and manage patients with fully edentulous arch
	Assess diagnose and manage patients with partial edentulous arch
Orthodontics	Assess and diagnose orthodontic patients including those with cleft lip and palate
	Perform preventive procedures in orthodontics
	Perform interceptive orthodontic procedures
Endodontics	Diagnose and manage pulpal and periapical disease
	Perform root canal treatment
	Diagnose and manage injured teeth endodontically
	Diagnose and manage tooth discoloration
	Diagnose and manage dental hypersensitivity
	Diagnose and manage endodontic- periodontal-related lesions
	Diagnose and manage endodontic emergencies
	Utilization of endodontic instruments and materials
Restorative	Diagnosis and assessment of dental caries
	Perform temporary and permanent restoration
	Assess, diagnose, and manage non-carious tooth lesions
Oral medicine	Assess, diagnose, and manage oral health problems and oral manifestations of systemic disease
	Diagnose and manage bacterial infections of the oral cavity
	Diagnose and manage viral infections of the oral cavity
	Diagnose and manage fungal infections of the oral cavity
	Assess, diagnose, and manage different lesions of the mouth
	Assess, diagnose, and manage orofacial pain
	Diagnose different types of headache
	Diagnose autoimmune disorders of the oral cavity
	Diagnose and manage physical and chemical injuries in the oral cavity
Pediatric Dentistry	Assess and diagnose dental developmental disturbances
	Make use of preventive measures for caries control
	Perform restorative and endodontic procedures
	Assess and manage dental trauma in pediatric patients
	Assess and manage oral health problems in children with special need
Periodontology	Assess, diagnose, and manage periodontal disease
	Assess, diagnose, and manage periodontal disease associated with systemic conditions
	Diagnose and manage abscess of the periodontium
Oral and Maxillofacial Surgery	Assess, diagnose, and manage emergencies in dental practice
	Apply infection prevention in dental and maxillofacial settings
	Assess preoperative and postoperative patient status
	Assess, diagnose, and manage soft tissue injuries
	Elaborate surgical incisions and flaps
	Perform tooth extraction (exodontia)
	Assess pain management in oral and maxillofacial surgery
	Assess, diagnose, and manage Orofacial Infections
	Diagnose and manage salivary gland disorders and tumors
	Diagnose oral pathologic lesions
	Diagnose and manage Orofacial cyst
	Diagnose and manage Orofacial tumors
	Diagnose and manage Temporomandibular joint disorders
	Diagnose and manage Temporomandibular joint pain

	Diagnose and manage Dentoalveolar Injuries
	Diagnose and manage trauma patients in oral and maxillofacial surgery
	Diagnose and manage facial bone Fractures
Oral radiology	Apply standard protocols for imaging and processing
Interdisciplinary	Assess dental patients with Endocrine and Metabolic disorders
	Assess dental patients with Neuromuscular disorders
	Assess dental patients with Cardiovascular diseases
	Assess dental patients with Hematologic disorders
	Diagnose and manage dental patients with upper and lower respiratory tract diseases
	Assess, diagnose, and manage patients with shock

Domain 2: Leadership and Management

Tasks

Manage health care system (planning, organizing, staffing, directing, evaluation and controlling)

Lead and manage a dental team (including conflict resolution)

Domain 3: Health Promotion and Disease Prevention

Tasks

Apply fluoride and fissure sealants

Educate the community on oral hygiene

Domain 4: Professionalism

Tasks

Adhere to legal and ethical principles in dental practice

Establish and maintain a caring, respectful, and collaborative working relationship with clients, client families, the dental team, and other working colleagues

Produce and maintain documentation of procedures and results

Domain 5: Scholar

Tasks

Conduct qualitative and quantitative research

Utilize evidence-based practice in dentistry

Sample questions

1. After utilizing a set of dental instruments in a clinic, a dentist sorted them out into different categories so that they would be ready for processing. The instruments which were in contact with non-intact skin, mucous membranes or body fluid were in one category and they were sent for high-level disinfection since they are heat-sensitive to be put in a heat sterilizer.

In which category do these instruments fall?

- A. Highly-critical B. Semi-critical C. Critical D. Non-critical

Answer key: The answer is **B**

Explanation: Dental instruments in the clinic which were in contact with mucous membrane or non-intact skin but did not penetrate soft tissue or contact body fluid (i.e., blood stream) have lower risk of transmission and they are categorized under semi-critical items. Semi-critical items can be heat tolerant or heat resistant. The heat resistant semi-critical items-should be processed with high level disinfectant

2. A patient was presented to the emergency department with a machine injury to the lower lip. The clinical examination revealed clear full thickness laceration of a third of the lower lip.

What is the most effective management in this case?

- A. One-layer suturing C. Three-layer suturing
B. Two-layer suturing D. Four-layer suturing

Answer key: The answer is **C**

Explanation: Clear full thickness laceration of a third of the lip is a tear involving the oral mucosa, orbicularis oris muscle and cutaneous part of the lip. To bring perfect tissue alignment, such lacerations can be effectively managed with three-layer suturing with adequate anesthesia administration. In a three-layer suturing, once a suture is placed at mucocutaneous junction of the laceration involves the vermillion border; the wound will be closed in layers from the inside out; starting from oral mucosa, orbicularis-oris muscle then dermal surface of the lip respectively.

3. A 26 -year-old female patient came to a hospital with a complaint of swelling on left submandibular area of three years duration. On examination, she had firm, well-localized, non-tender and mobile mass. During surgical excision of the mass, antiseptic agent that is odorless, less toxic, inexpensive, with long residual effect was used for cleaning the site.

What is the most likely used antiseptic agent in this patient?

- A. 70 percent ethanol C. Chlorine dioxide
B. Povidon-iodine D. Benzalkonium chloride

Answer key: The answer is **B**

Explanation: During surgical procedures, antiseptic agents that can be diluted sufficiently, less toxic and safe for application to living tissue should be used. Among the different types of surface antiseptics, povidone-iodine has properties of less toxicity, prolonged residual effect, odorless and inexpensive. This compound will build up on the patient's skin and it provides long lasting antibacterial activity.

4. A 30 -year-old male patient came to an emergency room with a complaint of road traffic accident of two hours duration. During clinical evaluation, his vital sign was; BP 110/70 mmHg, PR 85 beat/minute, RR 28 breaths /minute, GCS 11, and oxygen saturation less than 85. He had drooling of blood mixed saliva from his mouth. He had no any facial bone fracture. Cervical spine fracture was not ruled out.

What would be the first best airway management procedure in this case?

- | | |
|------------------|---------------------------|
| A. Chin lifting | C. Inserting oral airway |
| B. Jaw thrusting | D. Inserting nasal airway |

Answer key: The answer is **B**

Explanation: The patient's BP, PR and RR are within normal range but he has decreased oxygen saturation due to upper air way obstruction which is caused by bleeding from the mouth. In addition, the GCS level of the patient is reduced to 11 indicatives of possible head or cervical spine injury. Therefore, in this patient with suspected cervical spine injury but not ruled out yet, the safest and best air way management and quick lifesaving intervention is using Jaw thrust procedure. Jaw-thrust procedure is gentle pulling of the mandible forward by placement of both hands along the ascending ramus of the mandible, rotating fingers at the angle of the mandible inferiorly and exerting pressure over the teeth or chin by the thumbs simultaneously with stabilized cervical spine.

5. A dentist planned fixed prosthesis for a patient requiring replacement of missing 23 and 24 with artificial teeth. The dentist wanted to take diagnostic cast and selected alginate impression material.

What is the most likely type of mixing technique to be applied manually?

- | | |
|----------------|--------------------|
| A. Circular | C. Side by side |
| B. Up and down | D. Figure of eight |

Answer key: The answer is **D**

Explanation: - A vigorous figure of eight mixing technique is used to mix the alginate powder and water by wiping the mixture against the side of the mixing bowl. This mixing technique is used to express air bubbles and incorporate all of the powder into the water. The figure of eight

mixing technique results in a smooth, creamy mixture that does not readily drip off the spatula when it is raised from the bowl.

6. A 25-year-old male patient visits the dental OPD of a hospital for orthodontic consultation. The orthodontist conducts clinical examination of the patient and asks the dental surgeon to take an impression of the lower dental arch.

What is the most appropriate impression tray to be used in this case?

- A. Perforated tray with no flanges
- B. Perforated tray with low flanges
- C. Perforated tray with high flanges
- D. Perforated tray with moderate flanges

Answer key: The answer is C

Explanation: The perforated orthodontic tray with high flanges extends deep into the buccal and lingual sulci. Therefore, it can take a proper impression of the hard and soft tissues of the den to-alveolar region in order to fabricate orthodontic study model that reproduces the supporting structures of the oral cavity of the patient as much as possible.

7. A 50-year-old male patient comes to a dental clinic with a complaint of tooth ache. The patient discloses that he is taking medication for valvular heart disease. On physical examination, periodontal abscess is detected. The dentist plans to perform tooth extraction.

What is the most serious complication due to tissue manipulation for this patient?

- | | |
|---------------------------|---------------------------|
| A. Valvular prolapse | C. Infective endocarditis |
| B. Sub-acute endocarditis | D. Aortic stenosis |

Answer key: the answer is C.

Explanation: - when patients with valvular heart disease have infection in the oral cavity; they are at a higher risk of developing infective endocarditis. This happens due to tissue manipulation in treatment procedures as the bacteria from the infection site has higher probability of traveling to the defective heart valve.

8. A 10-year-old male patient came to a dental clinic after two hours duration facing dental injury to his anterior upper jaw by falling from a bicycle. During clinical examination he has palatal displacement of tooth number 11 which is not mobile upon palpation. Periapical radiographic examinations at 45^0 , 90^0 , and 110^0 angles revealed small radiolucent line on the root surface.

What is the most likely type of injury in this case?

- | | |
|------------------------|---------------------------|
| A. Crown Infarction | C. Cervical root fracture |
| B. Crown-Root fracture | D. Apical root fracture |

Answer key: The answer is **D**

Explanation: Apical root fracture is a rare type of dento-alveolar injury which might occur due to various traumatic forces. In order to diagnose apical root fractures, the dentist has to combine his/her clinical as well as radiographic interpretations abilities. Clinically when we do palpation test, the more apical the fracture line, the less mobile the tooth becomes. Since it might be overlooked on a single radiographic tests, intraoral periapical x-rays with various degrees are needed most commonly at 45^0 , 90^0 and 110^0 . These are taken to confirm the presence of root fractures.

9. A seven-year-old male child was brought to dental clinic for the treatment of dental pain on his upper left back jaw. During exploration, there was soft brown discoloration on occlusal surface of tooth number 64. The pulp was found to have positive response upon vitality test and there were intact periapical structures upon radiographic evaluation.

What is the most appropriate treatment for this case?

- | | |
|---------------------|--------------------------|
| A. Anti-pain | C. Root canal treatment |
| B. Tooth extraction | D. Restorative treatment |

Answer key: The answer is **D**

Explanation: Dental caries is dissolution of the hard tooth structure due to bacterial activities. Patients with dental caries might have various clinical presentations and their management depends on their presentations as well as the severity of the tooth structure lost. In this patient, he does not have pulpal involvement and the apical structures are also intact upon radiographic evaluation which makes restorative treatment the primary mode of management.

10. A 35-year-old female patient visits to a dental clinic for dental restoration. During clinical examinations, she has small cavities with active caries on her multiple teeth.

What is the best material to be selected to restore the cavities?

- | | |
|----------------|--------------|
| A. Direct gold | B. Composite |
|----------------|--------------|

C. Amalgam alloy

D. Glass ionomer cement

Answer key: The answer is **D**

Explanation: Selection of restorative material for management of caries depends on the type of caries lesion, location of the lesion, susceptibility of the patient, etc. Glass ionomer cement is a restorative material which is known for its fluoride release after restoration. Fluoride is extremely important for tooth re-mineralization and it displays antibacterial properties. Due to these factors, Glass ionomer cement is considered the best restorative material for patients with multiple caries lesions.

11. A 43-year-old male patient comes to a dental clinic with a complaint of gum swelling and mobility of two left lower teeth four weeks duration. On clinical examination, he has fistulous tract associated with a deep pocket between tooth number 33 and 34, grade II mobility of tooth 34 which is slightly elevated from the socket. Otherwise, he has neither other signs of systemic involvement nor pain on the offending tooth.

What is the most likely diagnosis in this case?

A. Chronic periodontal abscess

C. Chronic gingival abscess

B. Acute periodontal abscess

D. Acute gingival abscess

Answer key: The answer is **A**

Explanation: Abscess formation can take place in various structures and its name can be derived based on the structures it accumulated around such as gingival abscess, periodontal abscess, pericoronal abscess or periapical abscess. An abscess which is accumulated deep within the periodontal structures is known as periodontal abscess. Periodontal abscess can be further divided as acute or chronic. Chronic periodontal abscess is usually characterized by fistulous tract and the lack of severe pain as well as systemic manifestations unlike the acute forms.

12. A dentist plans to provide oral health education to the community. She intends to inform, motivate and guide the people in order to improve their actions towards prevention of oral diseases and promotion of oral health.

What is the most effective mass approach to be used in this case?

A. Home visit

C. Panel discussion

B. Symposium

D. Television broadcast

Answer key: The answer is **D**

Explanation: - Television program is effective approach to deliver oral health education to the public. It is a one-way mass approach that is useful in transmitting messages with a wider public coverage. The numbers reached by television programs are usually millions. It can inform the

public about oral health promotion and motivate prevention of oral health diseases while giving high returns for the time and money invested.

13. A dentist encountered a child with a suspicious sign of abuse and neglect. He assessed the child based on the chief complaint and his suspicions which was beyond the scope of dentist's examination. The dentist is trying to maintain confidentiality during documentation of the case.

What is most appropriate documentation action to ensure confidentiality?

- A. Include it with the clinical notes within the medical records
- B. Take a personal note on a separate paper and put it in a separate area
- C. Take a note on a separate paper and attach it to the medical record
- D. Do not take note about the patient's suspicion, but report to the authorities

Answer key: The answer is **B**

Explanation: Maintaining confidentiality especially in a case of suspected abuse and neglect has paramount benefits. As a result, all dental practitioners need to practice proper ways of documentation, identify a practice that is within their own scope, and communicate with relevant bodies when necessary. As a result, in a case of suspected abuse this is beyond the scope of dentists (outside the head and neck areas). The dentists should focus on their professional duty. They are not expected to question further about the suspicions. Instead, they take personal notes and keep in a separate area and not in the patient's record. Including suspicions note on medical records, attaching to medical records and failure to take note are inappropriate in the proper documentation of suspected child abuse and neglect.

14. Two staff members of a certain hospital had a conflict about the night duty schedule. Hence they went to the coordinator to solve the problem since they did not reach an agreement. After listening to both of them, the coordinator managed the conflict by convincing one of the parties to leave his stand or his interest.

What most likely conflict management strategy is applied by the coordinator?

- A. Win-Win
- B. Win- Lose
- C. Lose -Lose
- D. Neither win nor Loss

Answer key: The answer is **B**

Explanation: In conflict situations, individuals can either suppress conflict or engage in activity, which will lead to its resolution. Though win-lose strategy is not the optimal way of resolving conflicts because one of the parties loses or compromises his interest whereas the other gets control or dominance over that of the other; the coordinator in this case scenario managed the conflict by convincing one of the parties to leave his/her interest. Win- lose strategy of

conflict resolution is quite common. The win-win strategy is an approach that allows both individuals to feel they have accomplished all or part of their goals and it tries to satisfy mutual needs.

15. A 55-year-old patient with a history of Type II DM and hypertension was on lifestyle modifications. Assessment shows the presence of severe periodontal infections with overall poor oral health. The dental surgeon is looking for the strongest evidence to use an electronic toothbrush rather than the manual toothbrush to aid maintenance of effective oral hygiene.

What is the most likely study design that can produce strong evidence to be used by the dental surgeon?

- | | |
|------------------------------|--|
| A. Opinions of authorities | C. Cross-sectional comparative study |
| B. Randomized control trials | D. Cohort or Case control analytical study |

Answer key: the answer is B.

Explanation: Randomized control trial is an epidemiological experiment in which subjects in a population are randomly allocated into groups, usually called study and control groups, to receive or not to receive an experimental preventive or therapeutic procedure, or intervention. It is generally considered to be the strongest type of research design to generate the evidence as it has randomization and blinding issue in its design. In the scenario a surgeon prefers to use electronic toothbrush rather than the manual toothbrush for oral hygiene maintenance based on the strongest evidence that he/she has. The other options do not generate strong evidence compared from the randomized control trail.

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