

ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2011
EXAMINATION CATEGORY: TECHNICAL

PART III: SUBJECT SPECIALIZATION PAPER FOR DENTISTRY

Date : 30th October, 2011
Total Marks : 100
Examination Time : 2.5 Hours
Reading Time : **15 Minutes (Prior to examination Time)**

INSTRUCTIONS

1. Write your Roll Number clearly on the answer booklet in the space provided.
2. The first 15 minutes is being provided to check the number of pages, printing errors, clarify doubts and to read the instructions. You are **NOT PERMITTED TO WRITE** during this time.
3. Use either **Blue** or **Black** ink pen or ball point pen for the written part and **H.B. Pencils** for the sketches and drawings.
4. All answers should be written on the Answer Booklet provided. Candidates are not allowed to write anything on the question paper.
5. This Question Booklet consists of? **11 pages, including this page**. It is divided into two sections, namely **SECTION A** and **SECTION B**.
6. **SECTION A** consists of two parts, **Part I** and **Part II**.
Part I consists of 30 multiple choice questions carrying one (1) mark each and is **compulsory**. The answer of your choice should be clearly written **in whole** along with the question and option number on your answer booklet.
Part II consists of four (4) short answer questions of five (5) marks each and all questions are **compulsory**.
7. **SECTION B** consists of two Case Studies. Choose only ONE case study and answer the question under your choice. Each case study carries fifty (50) marks in total.

Section A (50 Marks)
Answer all questions in section A.

Part I.

Multiple choice questions: The answer of your choice should be clearly written in whole along with the question and its number in your answer booklet. Each question is worth 1 mark (total 30 marks).

1. Within a tooth root, the space occupied by the pulp tissue is called:
 - a. Pulp chamber
 - b. Pulp space
 - c. Pulp canal
 - d. Pulp cavity

2. The peg shaped lateral incisor is formed by:
 - a. Deficient calcification in the formation stage.
 - b. Deficient matrix formation.
 - c. Wear and tear of enamel after eruption.
 - d. Deficient development of lobes.

3. Calcification of roots of the primary teeth is normally completed in:
 - a. 1-2 years
 - b. 3-4 years
 - c. 5-6 years
 - d. 7-8 years

4. Calcification of Permanent First molar begins:
 - a. At 4 months in vitro
 - b. At birth
 - c. 3-4 months after birth
 - d. 10-12 months after birth.

5. Erythromycin is:
 - a. Bacterio-static in action.
 - b. Bacterio-cidal in action.
 - c. Static in low but cidal in high concentration.
 - d. Cidal in high concentration.

6. Immunoglobulins are:
 - a. Polysaccharides
 - b. Glycoproteins
 - c. Aminoacids
 - d. Proteins

7. The first antibodies synthesized by the human foetus are:
 - a. IgA
 - b. IgG
 - c. IgM
 - d. IgE

8. The first sign of human tooth development is seen during:
- 10th week of embryonic life.
 - 8th week of embryonic life.
 - 6th week of embryonic life.
 - 14th week of embryonic life.
9. The salivary duct of Parotid gland is:
- Bartholins' duct
 - Wharton's duct
 - Stenson's duct
 - Lingual duct.
10. The **permanent** teeth are initiated by:
- Dental lamina
 - Successional lamina
 - Enamel organ
 - New tooth buds
11. Enamel pearls are:
- Found in oysters
 - Found on the cusps of certain teeth.
 - Found in the area of furcation of roots of permanent teeth.
 - None of the above.
12. Which of the following impression material is elastic:
- Impresssin compound material
 - Zinc-oxide eugenol paste
 - Alu-wax impression material
 - Polysiloxane imp. material
13. Dental Enamel constitutes Hydroxyapatite crystals and each crystal is made of several thousands of unit cells. Unit cell of Hydroxyapatite crystal is represented as:
- $\text{Ca}_3(\text{PO}_4)_2 \cdot \text{Ca}(\text{OH})_2$
 - $2\text{Ca}_3(\text{PO}_4)_2 \cdot \text{Ca}(\text{OH})_2$
 - $3\text{Ca}_3(\text{PO}_4)_2 \cdot \text{Ca}(\text{OH})_2$
 - $4\text{Ca}_3(\text{PO}_4)_2 \cdot \text{Ca}(\text{OH})_2$
14. Which of the following impression materials has the most dimensional stability:
- Polyether imp. material
 - Polysulphide imp. material
 - Polyvinyl-siloxane imp. material
 - Polysiloxane imp. material
15. The Ag_2Hg_3 phase in Amalgam mix is represented by:
- γ Phase
 - β Phase
 - γ_1 Phase
 - γ_2 Phase

16. The main disadvantage of ZnOE impression material is:
- Poor flow characteristics
 - Inaccuracy in reproducing soft tissue details.
 - Stinging sensation.
 - Excessive shrinkage on hardening.
17. Caries free individuals show:
- High levels of salivary IgA
 - Low levels of salivary IgA.
 - High levels of salivary IgG
 - Low levels of IgM.
18. Young's formula to calculate dose of a drug for children:
- Age/age + 12 x Adult dose.
 - Age/20 x Adult dose.
 - Age + 12/age x Adult dose.
 - Age/12 x Adult dose x 20.
19. Local Anaesthetic agent works by blocking:
- Depolarization of nerve.
 - Repolarization of nerve.
 - Hyper polarization of nerve.
 - All of the above.
20. Status epilepticus may be precipitated and can occur in a dental clinic. The first choice of drug in such an emergency is:
- Inj. Phenytoin
 - Valproic Acid
 - Inj. Carbamazepine
 - Inj. Diazepam
21. Most harmful X-ray beam to the operator is:
- The primary beam rays
 - Secondary beam rays
 - Scattered rays
 - Tertiary beam rays
22. The most common Odontogenic cyst in the oral cavity s:
- Odontogenic cyst
 - Keratocyst
 - Periapical cyst
 - Dentigerous cyst
23. Class II division 2 Malocclusion is commonly associated with:
- Open bite
 - Cross bite
 - Deep bite
 - Scissor bite

24. The mechanism of action of Tetracycline and Clindamycin antimicrobial agents is by:
- Inhibiting cell-wall synthesis
 - Interfering with DNA functions
 - Inhibiting protein synthesis
 - Altering cell-wall permeability
25. Which of the following fractures involve the Maxillary antrum?
- Le Forte I fracture
 - Le Forte II fracture
 - Le Forte II & III fractures
 - Le Forte I & II fractures
26. Odontolithiasis is also known as:
- Stone in the salivary gland
 - Stone in the maxillary gland
 - Calculus deposits on teeth
 - There is no such term
27. The role of microbial plaque is most obscure in which of the following diseases?
- Gingivitis
 - Periodontitis
 - Juvenile Periodontitis
 - Acute Necrotizing ulcerative gingivitis
28. In Juvenile Periodontitis, the teeth earliest and severely affected are:
- Incisors & first premolars
 - Incisors & second premolars
 - Incisors & first molars
 - Incisors & second molars
29. White gold alloys are :
- Alloys with no gold at all
 - Predominantly gold containing but whitened by the use of palladium and silver
 - Contains only white gold
 - Contains Zinc as whitener.
30. A patient presenting with a tumor size of 3-5cm involving the homolateral cervical lymph nodes that are not fixed but clinically palpable with suspected metastasis will be staged according to TNM classification as:
- $T_1N_0M_0$
 - $T_2N_1M_0$
 - $T_2N_1M_1$
 - $T_2N_2M_0$

PART II.

**Short answer questions (20 marks). Each question is worth 5 marks.
Answer all the four (4) questions.**

1. Write down various anti-caries agents. Explain the mechanism of actions for Fluoride as anti-caries agent.
2. What is a dental sealant? Give the classifications and indications. Write down the step-wise clinical procedures of applying sealant in a child patient.
3. Write down Ellis classification of tooth fracture. How do you manage Ellis class IV fracture?
4. In an OPG X-ray, radiologically you find a large distinct multi-locular non-corticated radiolucent area **associated to an impacted lower third molar** tooth. Give your differential diagnosis and brief management of the first one you mention.

Section B (Total: 50 Marks)

Answer any one (1) of the two questions. (a, b, c, d, f: 5Marks each; g: 20Marks)

1. A young adult male of 21 years of age comes to the Dental clinic with a swollen Rt. Sub-mandibular region. He gives the following medical/dental histories.
Histories: H/O RHD when young and has been to Cardiac center in India and has a prosthetic Mitral valve replacement for last 3 years. He is on regular medications.
H/O repeated swelling of the Rt. Sub-Mandibular region for the last two years. He was repeatedly given some medicines and sent back, but the problem persists on and off and suffers from trismus and is not able to eat his normal diet. He is desperate to get rid of the dental problem once for all.
 - a. What is his medical problem? What could be the medicines that this patient has to eat regularly after the Mitral valve replacement prosthetic surgery?
 - b. What are the precautions a Dentist has to take for any invasive procedures he has to undergo? Write down the NYHA (New York Heart Association) Guidelines of various Antibiotic Prophylaxis prior to Dental treatment in patients with Rheumatic heart Disease.
 - c. What are other cardiac diseases that a patient has to take Antibiotic prophylaxis prior to any invasive Dental therapy?
 - d. What other cardiac diseases in a dental patient do not need Antibiotic prophylaxis?
 - e. Write the differential Diagnosis for his reoccurring Dental problem.
 - f. What other investigations should be carried out in such a case prior to any Dental invasive procedures?
 - g. Describe the management of his Dental problem such that he does not have to suffer again from the same problem.

2. An old man of 65 years comes to you with a history of progressive swollen Left cheek for the last one year. He gives the following medical/dental histories:

H/O: Hypertension for the past four years on regular treatment, Diabetes for last two years on dietary control.

Personal habit of only social drinking of alcohol.

Non-smoker, but had been on Tobacco chewing habit since 30 years.

Doma eating habits for last 25-30 years.

Extra-oral swelling being ill-defined, the intra-oral examination reveals a huge fungating ulcer of the right cheek of 3cm x 3cm in size with everted margins. It is bleeding on palpation and probing. Only local draining lymph nodes are palpable but not fixed.

- a. What is this patient suffering from?
- b. What are the investigations that you would like to carry out to confirm your diagnosis?
- c. Write down the various causes of Oral cancer.
- d. What are the most common oral cancers seen in South-east Asia region?
- e. Write down the TNM classification for this patient.
- f. Write down the Dental precautions one has to take prior to and after subjecting the patient to radiation therapy.
- g. How would you manage such a case? What are the treatment options for him?