

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2016
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALIZATION PAPER FOR DENTISTRY

Date: 2 October 2016
Total Marks: 100
Examination Time: 150 minutes (2.5 hours)
Reading Time: 15 minutes (*prior to examination time*)

GENERAL INSTRUCTIONS

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is being provided to check the number of pages, printing error, clarify doubts and to read instructions in Question Paper. You are NOT permitted to write during this time.
3. This paper consists of **TWO Sections, namely Section A and Section B.**
Section A has two parts: Part I - **30 Multiple Choice Questions.**
Part II - **4 Short Answer Questions.**
All questions under **Section A** are **COMPULSORY.**
Section B consists of 2 case studies. Choose only **ONE** case study and answer the questions under your choice.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating correct Section, Part and Question Number will NOT be evaluated and no marks would be awarded.
6. Begin each Section and Part in a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. You are required to hand over the Answer Booklet to the Invigilator before leaving the examination hall.
10. The Question paper has 8 printed pages including this Instruction Page.

GOOD LUCK!

SECTION A

PART I – Multiple Choice Questions (30 marks)

Choose the correct answer and write down the letter of your chosen answer in the Answer Booklet against the question number e.g. 31 (c). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. Which of the following is generally regarded as a universal luting cement?
 - a. Zinc oxide eugenol
 - b. glass ionomer and polycarboxylate
 - c. silicophosphate
 - d. zinc phosphate

2. Vitamin that is useful in treatment of cancer is
 - a. Vitamin A
 - b. Vitamin E
 - c. Vitamin D
 - d. Vitamin K

3. When the adhesive and the adherent are compatible, which means good wetting, the contact angle tends to be
 - a. High
 - b. Medium
 - c. Low
 - d. Unpredictable

4. When plaster or stone (calcium sulphate hemihydrates) is heated to above 130°C to 200°C, it produces a product that maybe represented by a formula:
 - a. $\text{CaSO}_4 \cdot \text{H}_2\text{O}$
 - b. $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$
 - c. $(\text{CaSO}_4)_2$
 - d. CaSO_4

5. A skin lesion that is fluid filled raised area of more than 5 mm is called
 - a. Vesicle
 - b. Bulla
 - c. Papule
 - d. Pustule

6. The composite of choice for anterior restorations is mainly done using
 - a. Small particle composites
 - b. Conventional composites
 - c. Hybrid composites
 - d. Microfilled composites

7. Interproximal caries of anterior teeth is best detected by
 - a. Bitewing radiograph
 - b. Periapical radiograph
 - c. Occlusal radiograph
 - d. None of the above

8. The drug that might cause Reye Syndrome in children younger than 12 years age is
 - a. Paracetamol
 - b. Aspirin
 - c. Ibuprofen
 - d. Cisplatin

9. The professionally applied topical fluoride that has maximum effect in controlling dental caries
 - a. 1.23% acidulated phosphate fluoride(APF)
 - b. 2% neutral NaF
 - c. 5% NaF Varnish
 - d. 2% stannous fluoride

10. Which statement about early dental development is INCORRECT?
 - a. Cap stage is accomplished by unequal growth in different parts.
 - b. In the cap stage the inner and outer enamel epithelial cells are completely alike.
 - c. The transition from cap stage to bell stage is particularly marked by the full differentiation of stellate reticulum.
 - d. The dental papilla and the dental sac develop in the cap stage.

11. Which of the following does contribute to the formation of the upper lip?
 - a. Lateral nasal process.
 - b. Two maxillary processes & medial nasal process.
 - c. Medial nasal process.
 - d. First branchial arch.

12. Immunoglobulin produced locally and protects mucosa is:
 - a. Ig G
 - b. Ig A
 - c. Ig M
 - d. Ig E

13. All statements regarding dentinal hypersensitivity (DH) is correct EXCEPT
 - a. Least between 20-30 years of age
 - b. Most common sites are Cervical and Buccal surfaces of teeth
 - c. Canines and premolars are mostly affected
 - d. Incidence more in questionnaire than clinical study

14. Colour of the oxygen cylinder is
 - a. Black with White line
 - b. White with blue line
 - c. Blue with white line
 - d. White with black line

15. Which of the following is the recommended method for sterilizing metal dental instruments?
 - a. Boiling water for 30 minutes
 - b. Chlorhexidine 5% for 24 hours
 - c. Steam at 100°C for 5 minutes
 - d. Steam at 134°C for 3 minutes

16. In research, if a sample is unrepresentative, this implies that
 - a. not enough data were collected
 - b. the sample should not be used to make inferences about the population
 - c. the data are not normally distributed
 - d. none of the above

17. Before performing oral surgery on a patient who is taking warfarin, which of the following should be evaluated?
 - a. Bleeding time
 - b. Clotting time
 - c. Prothrombin time
 - d. Coagulation time

18. You notice a lesion on the labial alveolar mucosa of the lower right lateral incisor tooth of one of your patients and decide to take a biopsy to send for oral pathology report. Which nerve would require local anaesthesia in order to carry out a pain-free biopsy?
 - a. Lingual nerve
 - b. The incisive nerve
 - c. The mental nerve
 - d. The buccal branch of facial nerve

19. During the extraction of a wisdom tooth, a pregnant woman in the late stage of second trimester faints. In which of the following positions should she be placed?
 - a. Supine, head down
 - b. Supine, head up
 - c. Supine, horizontal
 - d. Left lateral

20. History of excessive thirst, hunger, micturition during nights and recent loosening of teeth usually indicate that the patient is suffering from
 - a. Hypothyroidism
 - b. Glomerulonephritis

- c. Diabetes mellitus
 - d. Hypertension
21. Which of the following is the primary cause of periodontal disease?
- a. Plaque
 - b. Vitamin deficiency
 - c. Occlusal trauma
 - d. Systemic disease
22. A successful infraorbital nerve block will produce anaesthesia of the
- a. Maxillary anterior teeth
 - b. Maxillary anterior teeth and labial gingiva
 - c. Maxillary anterior teeth , labial gingiva and upper lip
 - d. Maxillary anterior teeth , labial gingiva, upper lip and anterior hard palate
23. In a patient with a normal healthy mouth, you would expect the mucosa covering the alveolar process supporting the mandibular teeth to be
- a. light pink in colour on both sides of the mucogingival junction
 - b. light pink below the mucogingival junction and red above it
 - c. red below the mucogingival junction and light pink above it
 - d. red on both sides of the mucogingival junction
24. Skin over the prominence of the cheek is supplied by
- a. Zygomaticofacial
 - b. Zygomaticotemporal
 - c. Auriculotemporal
 - d. Infra trochlear
25. The most common clinical sign of occlusal trauma is
- a. Cracks on enamel
 - b. Abrasion of teeth
 - c. Mobility of teeth
 - d. Wear facets
26. The frequency of bacteremia is highest with
- a. Root canal therapy
 - b. Pulpectomy
 - c. Extractions
 - d. Scaling
27. House and Brackmann test is used to evaluate the function of
- a. Facial nerve
 - b. Hypoglossal nerve
 - c. Trigeminal nerve
 - d. Trochlear nerve

28. A 4-year-old child has a normal complement of primary teeth, but they are grey and exhibit extensive occlusal and incisal wear. Radiographic examination indicates extensive deposits of secondary dentin in these teeth. Most likely this condition is
- Neonatal hypoplasia
 - Amelogenesis imperfecta
 - Cleidocranial dysplasia
 - Dentinogenesis imperfecta
29. Carbohydrates ingested in excess are stored in the body as
- Glycogen
 - Triglycerides
 - Glucose
 - Protein
30. A patient with fever for the last 15 days is suspected of suffering from typhoid. Which of the following tests will confirm the diagnosis?
- Blood culture
 - Widal's test
 - Stool culture
 - Urine culture

PART II – Short Answer Questions (20 marks).

This part has 4 Short Answer Questions. Answer ALL the questions. Each question carries 5 marks.

1. What do you mean by dental caries? Name the main bacterial species most commonly associated with initiation and progression of caries? Draw a labelled Keye's diagram to show how different factors interplay to form dental caries. [1+2+2]
2. Define or explain the following: (a) Ductility (b) Malleability (c) Anchorage (d) Major connector (e) Anaphylactic reaction. [5]
3. Define fracture. Briefly describe various Le Fort maxillofacial fractures. [1+4]
4. You frequently see green stains on children's teeth. What causes these stains and what is its significance in relation to caries? How can you differentiate between extrinsic and intrinsic stains? [1+4]

SECTION B

Case Study

Choose either Case 1 or 2 from this section. Each case study carries 50 marks.

Case 1

A patient arrives to the dental clinic seeking restoring the esthetic and the function of his mouth which is severely deteriorated by his bad history of careless behavior toward his oral hygiene. He has visited and consulted many dentists but he refused the treatment planning, insisting on replacing his missing teeth by FPD and crowning the deteriorated teeth. On examination: 18, 28, 46, 45 are missing; wear facets on 23,24,34,35; deep pockets around 16, 26, 36, 47; discoloured 21, 23 and 11,13, 22 endodontically treated.

- a) State chief complaint(s) of this patient. [1]
- b) What is the recommended method to brush periodontally diseased teeth? [1]
- c) What are the other brushing methods that could be recommend to patients? [4]
- d) How can you assess effectiveness of oral hygiene in patients? [2]
- e) Mention some adverse effect of adopting improper brushing methods. [4]
- f) Enumerate functions of different types of permanent teeth. [5]
- g) Define attachment loss. What are the risk factors for tooth loss in adults? [1+3]
- h) Mention normal pocket depths and for the diseased periodontium. [3]
- i) What are the possible causes of tooth discolouration? How would you treat discolouration arising from within the tooth? [4+3]
- j) Classify dental alloys and mention gold composition (%) in each class. How does it differ from that of the revised classification system for alloys for fixed prosthodontics by American Dental Association on Scientific Affairs? [5]
- k) Enumerate composition of dental ceramic. [3]
- l) What is the most advanced method to replace lost tooth? [2]
- m) How can you prevent formation of ledges in endodontic practice? [1]
- n) Name some main causes of RCT failure. [3]
- o) Outline your treatment plan for this patient in a sequential order. [5]

OR

Case 2

A female patient of 74-year-old has been directed by the receptionist to an oral surgery clinic for the diagnosis and treatment of an ulcerated and irregularly-shaped fungating mass on left palate and alveolar ridge involving upper vestibule. The lesion was mostly asymptomatic and had been present for past several months but was expanding slowly. Your oral surgeon has already taken leave and the onus is on you to manage this case.

- a) How would you proceed to examine this patient before reaching a diagnosis? [3]
- b) What is the differential diagnosis of such a case? [5]
- c) What is the clinical presentation of such a lesion? [5]
- d) What is your final diagnosis of this lesion? [2]
- e) What lymphatic drainage is affected by such a lesion? [2]
- f) What are the implicated causative factors for such a fungating growth? [4]
- g) Name the possible virus that could have link to such a lesion. [2]
- h) Define biopsy. What are its types? [1+5]
- i) What is the difference between a lump and neoplasia? [6]
- j) What are common sites for oral malignancy? [5]
- k) Define ulcer. What are the common recurrent ulcers of the mouth? [5]
- l) How would you manage /treat this case? [5]

TASHI DELEK