

ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2013
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALIZATION PAPER for *MBBS*

Date	: 14 October 2013
Total Marks	: 100
Examination Time	: 150 minutes (2.5 hours)
Reading Time	: 15 Minutes (prior to examination time)

GENERAL INSTRUCTIONS:

1. Write your Roll Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is being provided to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. 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 two Case Studies. Choose only ONE case study and answer the questions under your choice.
4. 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 any or correct Section, Part and Question Number will NOT be evaluated and no marks would be awarded.
5. Begin each Section and Part in a fresh page of the Answer Booklet.
6. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
7. Use of any other paper including paper for rough work is not permitted.
8. You are required to hand over the Answer Booklet to the Invigilator before leaving the examination hall.
9. This paper has **12** printed pages in all, 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 the correct answer chosen 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. A patient presenting with acute appendicitis will have
 - a. Positive Rovsing's sign
 - b. Mass in right iliac fossa
 - c. Loss of appetite
 - d. All of above

2. Gall stones are common among the Bhutanese population. Which statement about gall stones is TRUE?
 - a. Most people with gallstones are asymptomatic.
 - b. CT is the imaging modality of choice in diagnosing gallstones.
 - c. Approximately 90% of gallstones are visible on plain abdominal x-ray.
 - d. Gallstone ileus occurs when a gallstone travels through the bile duct into the small bowel and causes an obstruction.

3. The main tissues which provide support to the uterus include:
 - a. Uterosacral and cardinal ligament
 - b. Rectus abdominis
 - c. Round ligament
 - d. Broad ligaments

4. In the presence of a positive pregnancy test and vaginal bleeding, the following are possible differential diagnoses if the cervix is closed EXCEPT:
 - a. Ectopic pregnancy
 - b. Incomplete abortion
 - c. Threatened abortion
 - d. Complete abortion

5. A four year old child presents with inflamed knee and limping gait, the most likely cause would be:
 - a. Rheumatic Fever
 - b. Juvenile Rheumatoid Arthritis
 - c. Septic arthritis
 - d. Leukemia

6. In a suspected case of colorectal cancer, the tumor marker that is of clinical use in the work up of that patient is:
 - a. Thyroglobin
 - b. Prostate Specific Antigen
 - c. Serum Alpha fetoprotein
 - d. CEA (Carcinoembryonic Antigen)

7. Which ONE investigations you would recommend in the management of a sub-fertile couple :
 - a. Hysterosalpingogram
 - b. Rhesus blood group status of both partners
 - c. Day 25 progesterone level in the female with 28 day cycles
 - d. Chlamydia investigation of the male partner

8. Obstructive jaundice is diagnosed when:
 - a. Ultrasound reveals intrahepatic ductal dilatation
 - b. Patient has raised AST and ALT.
 - c. Patient has Coagulation disorders
 - d. All of the above

9. Most common cancer of the stomach among Bhutanese male population is
 - a. Adenocarcinoma
 - b. Squamous cell carcinoma
 - c. Lymphoma
 - d. Transitional cell carcinoma

10. A 38 year old patient, teacher by profession, presents to you with low back ache. Which symptoms would indicate that the patient needs to be referred immediately for further assessment?
 - a. Pain made worse by movement
 - b. Perineal anesthesia
 - c. Pain radiating to the leg
 - d. Numbness on one leg

11. A 70 year old male patient complains of reduced hearing. His audiogram reveals that he has sensorineural deafness. What would be your likely diagnosis?
 - a. Otosclerosis
 - b. Barotrauma
 - c. Perforation of tympanic membrane
 - d. Presbycusis

12. The management of a patient suffering from symptomatic dengue infection is:
- Acyclovir
 - Intra-venous steroids
 - Third generation cephalosporin
 - Supportive therapy
13. A patient comes to the Ophthalmology OPD with complaints of foreign body sensation and redness in the right eye. The possible etiology is:
- Blepharitis
 - Chalazion
 - Entropion with secondary trichiasis
 - Acute angle closure glaucoma
14. The condition which is associated with increased risk of skin malignancy is:
- Bowen's disease
 - Acanthosis nigricans
 - Squamous papilloma
 - Keratoacanthoma
15. Factors predisposing to venous thrombosis include all EXCEPT:
- thrombocytopenia
 - dehydration
 - thrombophlebitis
 - paraproteinaemia
16. Epstein-Barr virus is implicated in the following cancer except:
- Burkitt's lymphoma
 - B cell lymphoma
 - Kaposi's sarcoma
 - nasopharyngeal carcinoma
17. A patient comes with complaints of having a deformed nose and also complains that nobody takes his complaint seriously. He has visited several cosmetic surgeons but they have sent him back saying that there is nothing wrong with his nose. He is probably suffering from?
- Hypochondriasis
 - Somatization
 - Delusional disorder
 - Obsessive Compulsive Disorder

18. Which of the following is characteristic of measles?
- Begins as a maculopapular rash, then becomes vesicular
 - “Slapped cheek” appearance and lacy reticular pattern
 - Pustules on an erythematous base
 - Maculopapular eruption starting on upper trunk and spreading downwards
19. Most common sign of aspiration pneumonitis is:
- tachypnoea
 - bronchospasm
 - cyanosis
 - crepitations
20. A factory worker has developed pulmonary fibrosis after decades of exposure to one of the pollutants. The most likely inhaled pollutants would be:
- silica
 - tobacco smoke
 - ozone
 - wood dust
21. Fatty change in the liver is due to the accumulation of:
- Cholesterol
 - VLDL (very low density lipoproteins)
 - LDL (Low density lipoproteins)
 - Triglycerides
22. A 56 year old male has a history of aortic stenosis. Which one of the following is associated with aortic stenosis?
- Atrial fibrillation
 - Systolic ejection murmur
 - Increased pulse pressure
 - Diastolic murmur
23. The primary treatment for high-altitude pulmonary oedema (HAPE) is
- 100% O₂ by mask
 - oral acetazolamide, 200 mg, 4 times a day
 - oral nifedipine, 10–20 mg, 3 times a day
 - Immediate descent

24. Signs of placental separation after delivery include:
- Bleeding.
 - Changes of uterine shape from discoid to globular.
 - Lengthening of the umbilical cord.
 - All of the above.
25. Often, an increase in vaginal discharge may be noted during pregnancy, It may be:
- caused by Trichomonas
 - caused by Candidiasis
 - Physiological
 - All of the above
26. A 19-year-old woman comes to your office with a complaint of never having had menses. Physical examination shows that she is 1.37 m tall, & weighs 42 kg. She lacks breast & pubic hair development. There is webbing of her neck & cubitus valgus. Which of the following is likely to be true?
- Testicular feminization.
 - Klinefelter syndrome.
 - Turner's syndrome.
 - Congenital adrenal hyperplasia.
27. 28 year old lady presents to the OPD clinic with a history of irregular menstrual cycle for 2 months, she gives no history of post-coital bleeding. Her Pap smear report shows high grade squamous cell intraepithelial lesion (CIN II). You will refer the patient to the gynecologist for :
- Follow up & repeat pap smear after 6 months.
 - Laser cone biopsy.
 - Examination under anesthesia & (D&C)
 - Colposcopic assessment & pelvic biopsy.
28. The most common clinical presentation of early cervical cancer is:
- Foul-smelling vaginal discharge.
 - Asymptomatic.
 - Post-coital Bleeding.
 - Pelvic pain with leg edema.

29. A 27 year old lady presents to the emergency department with heavy per vaginal bleeding. She gives a history of normal vaginal delivery in the Basic Health Unit two weeks ago. The cause of bleeding most probably is:
- uterine atony
 - retained placental tissue
 - coagulopathy
 - lacerations
30. APGAR's score includes all the followings EXCEPT:
- Skin color.
 - Muscle tone.
 - Blood PH.
 - respirations

PART – II : Short Answer Questions (20 marks)

Answer ALL the questions. Each question carries 5 marks.

- Write short note on Physical Therapy?
- Describe the mechanism of action of Non-steroidal anti-inflammatory drugs (NSAIDs)?
- List the major and minor signs for clinical diagnosis of HIV/AIDs in children as per National Guideline for management of HIV/AIDs in Children and Adults?
- Define the following terms as per Bhutan's National Tuberculosis Guideline .
 - TB infection
 - TB disease

SECTION B
Case Study

Choose either Case 1 or Case 2 from this Section. Each Case carries 50 marks. Mark for each sub-question is indicated in the brackets.

CASE 1

Question 1.1

(10 marks)

Ap Dorji, a 70 years old man from Motithang was brought to the emergency department of JDWNR Hospital, with complaints of central chest pain. Nurses on duty have already given him morphine, oxygen, nitrates and aspirin.

- a. You are the medical officer on duty, what further questions would you ask him about?
 - i. His pain. (1 mark)
 - ii. His other associated symptoms. (1 mark)
- b. You suspect he is having an acute MI. What is the most important immediate Investigation you would request? (1 mark)
- c. ECG reading shows ST elevation. What would be the next step in your management, considering he is currently stable? (1 mark)
- d. Name **two** further investigations you would request for this man in the long term. (2 marks)
- e. What four medications is he likely to be started on prior to discharge (assuming there are no contraindications)? (4 marks)

Question 1.2

(10 marks)

Lhaden, a 60 years old lady, has come to the emergency department with complaints of chest pain. Her attendant says the pain began a few hours ago and she has had it before.

- a. Name three systems which may cause chest pain. (3 marks)
- b. Give one examples of disease conditions for each system? (3 marks)
- c. Give four contraindications for thrombolysis? (4 marks)

Question 1.3

(10 marks)

Chechey , a 10-day-old baby, has central cyanosis. She is diagnosed with Tetralogy of Fallot.

- a. Give **two** other congenital cardiac causes of cyanosis. (2 marks)
- b. What are the **four abnormalities** present in tetralogy of Fallot? (4 marks)
- c. Give **two other** symptoms of this condition. (2 marks)
- d. Name at least **two shunts** found in the circulatory system in utero, which close after birth? (2 marks)

Question 1.4

(10 marks)

A 65 year old Caucasian tourist, while trekking to Tango monastery, sustained injury to her right wrist, she was brought to the emergency department of JDWNRH, where a plain X-ray revealed a fracture. On further enquiry she was taking Tab. Propranolol for mild hypertension, along with multivitamins, she is an occasional smoker; she is not married and has no children. She was given first aid and was advised to see the orthopedic surgeon in the OPD the next day. The orthopedic surgeon after doing certain tests diagnosed her to be suffering from osteoporosis.

- a. What is osteoporosis. (4 marks)
- b. List at least 4 risk factors for osteoporosis. (4 marks)
- c. What life style changes and other dietary supplements would you recommend to patients suffering from osteoporosis to prevent fractures? (2 marks)

Question 1.5

(10 marks)

A primi gravida woman in her first trimester of pregnancy visits the ante-natal clinic for the first time-

- a. Her last Menstrual period (LMP) is 28th July 2013. Calculate her estimated date of delivery (EDD). (2 marks)
- b. List **four** tests that you will advice this patient. (4 marks)

- c. What vaccination will you give her? (*1 mark*)
- d. At the 4th month of her pregnancy, she will be prescribed iron and folic acid supplementation.
How much iron and folic acid is available in one iron folate tablet, supplied to ante-natal clinics in Bhutan? (*3 marks*)

CASE 2

Question 2.1

(10 marks)

You are the only doctor in a district hospital in Eastern Bhutan, you come across a 25 year old teacher, who has been referred to you from a nearby BHU Grade II. His main complaints are cough with expectoration for more than 2 weeks, which has not improved after a course of antibiotics and cough syrup. He has other symptoms like loss of appetite, evening rise of temperature, and loss of weight. Your probable diagnosis is pulmonary tuberculosis. Answer the questions that follow to confirm this diagnosis.

- a. The most cost effective laboratory test for confirming the above diagnosis would be to send the sputum for examination. What stain is used for this sputum examination?
(*2 marks*)
- b. How many samples of the sputum are required to make a diagnosis? (*2 marks*)
- c. The laboratory sputum report comes back as 3+. Give four reasons for **false positive** sputum report? (*4 marks*)
- d. List at least two other tests that are helpful in the diagnosis of pulmonary tuberculosis?
(*2 marks*)

Question 2.2

(10 marks)

Ap Pema a 72-year-old man comes to you with a 3-day history of right-sided chest pain. He denies any shortness of breath, nausea or vomiting. Physical examination shows a unilateral, erythematous, maculopapular rash extending from the anterior chest wall around to the back in a dermatomal pattern. The remainder of the examination is normal.

- a. What is your diagnosis? (*2 mark*)
- b. What is the likely cause?(*2 mark*)

- c. What ages are commonly affected? (2 mark)
- d. What is the most common complication from above conditions? (2 marks)
- e. Which would be the drug of choice for treatment of the above complications mentioned in (d)? (2 marks)

Question 2.3

(10 marks)

A 25 year-old woman G3/P2, presents to the emergency room with a history of 6 weeks amenorrhea. She complains of crampy lower abdominal pain, significant vaginal bleeding but no history of passage of product of conception. Urine for pregnancy test is Positive.

- a. What is the patient's most likely diagnosis? (2 mark)
- b. What should be the most important step in this patient's evaluation? (2 mark)
- c. What would a transvaginal ultrasonography most likely reveal? (2mark)
- d. How would you manage this case. (2 marks)
- e. On discharge from the hospital, she requests for a temporary method of family planning. Give the name of at least two types of temporary methods of family planning available at the district hospitals in Bhutan? (2 marks)

Question 2.4

(10 marks)

- a. A 24 year old woman has been referred to a psychiatrist by her primary care physician. The patient has been complaining of pain all over the body, frequent episodes of abdominal discomfort, decreased sexual desire, and occasional weakness of her right arm. According to the patient, all these symptoms have been present for less than a year.
 - i. What is the most appropriate diagnosis? (1 mark)
 - ii. Justify your answer. (4 marks)

b. After around 2.5 weeks of being treated with tricyclic antidepressants, a patient diagnosed with extreme depression with severe psychomotor retardation shows signs of improvement. There is marked improvement in his psychomotor retardation, although he continues to report severe ideas of worthlessness and hopelessness. One week later, he commits suicide by hanging himself.

(i) What description fits this suicide? *(1 mark)*

(ii) Justify your answer. *(4 marks)*

Question 2.5

(10 marks)

Mr. Phuba, A 55 year old man has come to consult you for preventive health care; he is obese (BMI 30), a regular smoker for 25 years and has a positive family history of diabetes and stomach cancer. Disease prevention can be classified into three types i.e. primary, secondary and tertiary prevention

a. Explain briefly what you understand by each type of prevention? *(4 marks)*

b. Name the type of prevention mentioned below

i) Mr. Phuba is diagnosed with Type II diabetes and he is put on Oral anti-diabetic, Dietary control and physical activity. What type of prevention is it? *(2 marks)*

ii) Mr. Phuba comes regularly to screen for stomach cancer and high blood pressure. What type of prevention is it? *(2 marks)*

iii) Mr. Phuba was advised to stop smoking as it can cause lung cancer, during the next visit, it is found that he has stopped smoking, fearing lung cancer. What type of prevention is it? *(2 marks)*