

**ROYAL CIVIL SERVICE COMMISSION**  
**BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2015**  
**EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALIZATION PAPER for MBBS + Sp. in Comprehensive General Medicine

<b>Date</b>	: 11 October 2015
<b>Total Marks</b>	: 100
<b>Examination Time</b>	: 150 minutes (2.5 hours)
<b>Reading Time</b>	: 15 Minutes (prior to examination time)

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**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. In General Practice, the doctor is specialized to demonstrate:
  - a. Competence in the management of acute and chronic health problems
  - b. Provide patient and person centered care rather than disease centered care
  - c. Provide community health care and prevent disease
  - d. All of the above
  
2. Risk factor for a liver disease in a heavy drinker include
  - a. Hepatitis C infection
  - b. Obesity
  - c. Smoking
  - d. Male sex
  
3. Which agent is responsible for elevated blood pressure, hyperglycemia, decreased bone density and occult blood in stool of a 60 year old male patient
  - a. Hydrochlorothiazide
  - b. Finasteride
  - c. Prednisolone
  - d. Metformin
  
4. Which category of medicine is of choice for a newly diagnosed male patient with diabetes and hypertension?
  - a. ACE
  - b. Beta-blocker
  - c. Calcium channel blocker
  - d. Alpha blocker
  
5. The following is true about cerebral infarction
  - a. The area of infarction tends to be wedge shaped
  - b. It can result from the thrombosis in the external carotid artery

- c. Coagulative necrosis occurs in the brain tissue
  - d. The necrotic tissue is eventually replaced by schwann cells
6. A urine test in an undiagnosed diabetic patient may show
- a. Glucose and high bilirubin
  - b. Ketones
  - c. Glucose and ketones
  - d. Ketones and adrenaline
7. Which of the following is true about stage 1A Hodgkin's lymphoma?
- a. It is associated with a raised serum lactate dehydrogenase
  - b. It may present with weight loss
  - c. It is best left untreated with "wait and watch" approach
  - d. It may be confined to the lymph nodes on one side of the neck
8. Which one of the physical examination sign may be seen in a patient with dehydration
- a. Capillary refill of 4 seconds
  - b. Capillary refill of less than 2 seconds
  - c. Increased skin turgor
  - d. Bradycardia
9. Most common medical problem faced in Primary Health Care is
- a. Coryza
  - b. UTI
  - c. Hypertension
  - d. Diabetes
10. Hypopigmented lesions are common presentation of
- a. Pityriasisrosea
  - b. Basal cell carcinoma
  - c. Tineacorporis
  - d. TineaVersicolor

11. Which is the most important in counseling?
- Establishing a rapport
  - Exclude physical illness
  - Family
  - Scheduled appointment
12. During the delivery of a baby who has estimated gestational age of 42 weeks, you note that the amniotic fluid contained thick meconium. Which is the most important initial step in the resuscitation of the baby?
- Aspirate gastric contents
  - Deliver oxygen
  - Suction the hypopharynx
  - Determine APGAR score
13. The commonest cause of hospital admission of a neonate following early discharge from hospital after delivery is
- Congenital heart disease
  - Metabolic disorder
  - Hyperbilirubinemia
  - Bacterial sepsis
14. A 2 year old boy who had mild upper respiratory tract infection suddenly develops noisy breathing, retraction of the chest wall, flaring of the nostril and barking cough. The most likely diagnosis is
- Asthma
  - Epiglottitis
  - Viral croup
  - Foreign body in the right main bronchus
15. Which of the following vaccine must not be given to a house hold contact of an immune-deficient child?
- BCG
  - Influenza
  - Oral Polio
  - Hepatitis B

16. In routine child immunization, the minimum time interval between doses of pentavalent (DTP, Hepatitis B, Hib) vaccines should be
- 8 weeks
  - 4 weeks
  - 2 weeks
  - 6 months
17. A 13 year old girl came to casualty with acute lower abdominal pain. She had cyclical pain for the last 6 months. She has not yet attained her menarche. On examination, a tense bulge was seen in the region of hymen. The most probable diagnosis is
- Imperforate hymen
  - Acute appendicitis
  - UTI
  - Ureteric colic
18. During pregnancy HIV transmission occurs mostly during
- 1<sup>st</sup> trimester
  - 2<sup>nd</sup> trimester
  - 3<sup>rd</sup> trimester
  - During labour
19. A primigravida presents to casualty at 34 weeks of gestation with acute pain abdomen for 2 hours, vaginal bleeding and decreased fetal movements. She should be managed by:
- Immediate cesarean section
  - Immediate induction of labour
  - Tocolytic therapy
  - Monitor progress of labour
20. While assessing risk factors for ectopic pregnancy, which family planning method is important
- Use of OCP
  - Use of Copper – T
  - Use of Injectable DMPA
  - Use of condoms

21. A 35 year old 2<sup>nd</sup> gravida patient presents to routine OPD at 24 weeks of gestation with complaints of headache and swelling of feet. Her blood pressure measured 150/90 mm of Hg and urine test was negative for Albumin. She was not a known case of hypertension. She is likely to have
- PIH
  - Chronic hypertension
  - Anxiety
  - Refractive error
22. Diarrhoea has been defined as a probable albeit not constant feature of acute appendicitis. In which of the following cases is this sign likely to be evident?
- In the first day of illness
  - In patient with very high temperature
  - Pelvic position of vermiform appendix
  - Retro-peritoneal position of vermiform appendix.
23. Fluid resuscitation in a burn patient is
- ½ of total fluid is given in the 1st 8 hours post burn
  - ¼ of total fluid is given in the 1st 8 hours post burn
  - The whole total fluid is given in 1st 8 hours
  - ½ of total fluid is given in 1st 6 hours.
24. The most common hernia in female is
- Femoral hernia
  - Indirect inguinal hernia
  - Obturator hernia
  - Direct inguinal hernia
25. Which muscle is exposed during a hemorrhoidectomy for internal hemorrhoids?
- Internal anal sphincter
  - Levatorani
  - Puborectalis
  - Coccygeus muscle
26. Clavicular fracture is treated by
- Figure of eight bandage
  - Open reduction and fixation
  - Skeletal traction
  - All of the above

27. Commonest site of fracture in children is
- Radius
  - Distal humerus
  - Clavicle
  - Femur
28. A 30 years old man had a road traffic accident and sustained fracture of femur. Two days later he developed sudden breathlessness. The most probable cause can be
- Pneumonia
  - Congestive heart failure
  - Bronchial asthma
  - Fat embolism
29. All of the following are complications of fracture of humerus **except**
- Compartment syndrome
  - Myositis ossificans
  - Malunion
  - Non-union
30. Rickets in infancy is characterized by the following **except**
- Craniotabes
  - Rachitic rosary
  - Wide open fontanelles
  - Bow legs

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**PART II – Short Answer Type Questions (20 Marks)**

**Answer ALL the questions. Each question carries 5 marks. Mark for each sub-question is indicated in the brackets.**

- A 15 year old boy presents with hearing impairment and scanty foul smelling discharge from the right ear for more than a year.
  - What is the probable diagnosis? (1 mark)

- ii. What will be the type of tympanic membrane perforation in an unsafe variety CSOM? (1 mark)
  - iii. On examination, tenderness is elicited over the bony prominence behind the right ear. What is the complication that this patient is having? (1 mark)
  - iv. Mention two other serious complications of this disease, if left untreated. ( $\frac{1}{2} + \frac{1}{2}$  mark)
  - v. What is the treatment for this patient? (1 mark)
2. A 60 year old male person complains of blurring of vision. On examination of his eyes with light, the doctor finds clouding of the lens which is more in the right eye than left.
  - i. From where does the crystalline lens derives its nourishment (1 mark)
  - ii. Write two risk factors for the development of cataract. ( $\frac{1}{2} + \frac{1}{2}$ )
  - iii. Good vision in dim light and clumsy vision in day light is a feature of which cataract?(1 mark)
  - iv. Which one of the following is the best rehabilitation for aphakia?
    - a) Spectacle b) Contact lens c) Anterior chamber IOL d) Posterior chamber IOL(1 mark)
  - v. What is amblyopia?(1 mark)
3. Tuberculosis is an important infectious disease which is the second most single agent killer disease in the world.
  - i. Name the causative organism of tuberculosis. (1 mark)
  - ii. Name four important 1<sup>st</sup> line drugs used for treatment of Tuberculosis. ( $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ )
  - iii. What is MDR TB? (1 mark)
  - iv. What does DOTS stand for in the treatment of tuberculosis? (1 mark)
  - v. Why vitamin B6 or pyridoxine is given with INH treatment? (1 mark)

4. 16 year old girl, a student of standard ten, was brought to the emergency room with fainting episodes, fits, hyperventilation, muscle cramps and tetany of hands. Physical examination did not reveal any remarkable findings. Family history suggested her father was addicted to alcohol and she had to help her mother at home and did not get enough time to study at home.
- What is the most probable diagnosis? (1 mark)
  - What is the management for this type of disorder? (2 marks)
  - What do you understand by **tolerance** in alcohol use disorder? (1 mark)
  - Name medicine that is used for detoxification for Alcohol dependence in Bhutan. (1 mark)

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## SECTION B

### Case study

Choose **either** case study 1 or case study 2 from this section. Each case study carries 50 marks. Marks for each sub-question are indicated in the brackets.

#### CASE STUDY 1 (50 marks)

- A. 40 year old man presented in the OPD with complaints of excessive thirst and frequent large volume urination. He also complained of throat pain, fever and mild cough for the last 3 days. He is a known case of diabetes for the last 5 years and is on Glibenclamide 5 mg daily and metformin 1gm twice a day.

**On general examination:** BP- 110/60 mm Hg, pulse- 110/min, temperature- 38 degree Celsius, dehydration- moderate, BMI - 23

**On systemic examination:** Pharynx was red & congested, chest was clear.

**Investigations:** RBS- 560 mg/dl, TLC- 20,000, neutrophils- 90%, Urine ketone- Positive, RFT- urea: 60 mg/dl, creatinine: 1.1mg/dl, serum electrolytes – K+: 2.5 mEq/l, Na+: 135 mEq/l, Cl: 104 mEq/l, LFT- Normal, Lipid profile- HDL: 36 mg/dl, LDL: 60 mg/dl, cholesterol- 250 mg/dl, TG- 150 mg/dl, throat swab for influenza- Negative.

**Answer the following questions (20 marks):**

- Write the complete diagnosis of this case. (3 marks)

2. What is the approach to treatment of this case (5 marks)
  3. It was found that the total requirement of plain insulin was 60 units when patient was taking normal diet. Now you would like to switch over to mixtard insulin. Prescribe the dose for the morning and evening. (2 marks)
  4. After 5 days in hospital, patient is eating well, his fasting and post prandial blood sugar have come to normal, urine ketones are negative, RFT & serum electrolytes are normal. Now patient wants to switch over to oral hypoglycemic agent (OHA) (glibenclamide& metformin). Would you like to try OHA in this patient? If yes, what advice will you give to this patient on diet, blood sugar checkup & when for adjustment of medicines? (1+4 = 5 marks)
  5. What is OHA failure? Did the above patient have OHA failure? How do you treat OHA failure patient? (2+1+2 = 5 marks)
- B. This diabetic patient had been under your care for months now. He has achieved fairly good control of blood sugar with OHA (Glibenclamide and Metformin). On the latest routine follow up you had noticed a small ulceration on his right foot which patient did not know.
- Answer the following questions (15 marks):**
- a. Name three microvascular complications of diabetes? (3 marks)
  - b. The patient complains of burning sensation on his feet and sometimes gets severe pain and is unable to sleep whole night. He also has a small area of loss of sensation of his right foot. His blood sugar has increased and his HbA1C is 9.5%. What is the type of diabetic complication he is having and how will you manage this patient? (2 marks)
  - c. One day at night, he was brought to the emergency room unconscious. His blood sugar was very low (20mg/dl) and serum creatinine was 2.5 mg/dl. How will you manage this hypoglycemic episode? What will be the approach to treatment of this patient now? (5 marks)
  - d. What is a diabetic foot? How to treat a diabetic foot? (5 marks)
- C. You had been working in a district hospital for the last 3 years. You have noticed increasing number of diabetes and hypertension cases in annual statistics and you also feel the same because of your experience working in that community.

**Answer the following questions (15 marks)**

1. Write five risk factors for development of diabetes. (5 marks)
  1. By looking at the risk factors, suggest 5 innovative ideas on how to reduce risk of developing diabetes in the community. (5 marks)
2. What do you mean by double burden of disease in developing countries? (2 marks)
3. World Health Organization has started Package of Essential NCD (PEN) Interventions in Low & middle income countries. Name four important NCDs that are given special attention in PEN Interventions. (3 marks)

**CASE STUDY 2**

A. One of the district hospital reports the following event in a boarding school on 15/9/2015:

**Event:** Outbreak of symptoms of cough, sore throat and high grade fever in a boarding school.

**No. of new cases:**

Day 1 (15/9/15) – 5 cases, Day 2 – 10 cases, Day 3 – 18 cases, Day 4 – 40 cases, Day 5 – 30 cases, Day 6 – 10 cases, Day 7 – 3 cases, Day 8 – No cases, Day 9– No cases, Day 10 – Day 20 - No cases. 5 cases needed hospital admission and no deaths occurred. No other schools in the districts reported such cases.

3 throat samples tested positive for influenza A on Day 1 and 5 tested positive on Day 2. PCR report on these samples were positive for noble virus H1N1.

**Answer the following questions (20 marks)**

1. In such an infectious disease outbreak in schools, how the district health authorities should respond? (10 marks)
  2. Draw a simple epidemiological curve for the above outbreak. From which day the number of cases started decreasing? (5 marks)
  3. Comment on the effectiveness of the control measures taken by district health authorities in the above outbreak. (5 marks)
- B. Recently there were two major outbreaks of infectious diseases in West Africa and South Korea.

**Answer the following questions (10 marks)**

1. Which are these two diseases? (2 marks)
  2. What is the mode of transmission of these diseases? Are there any vaccines for their prevention? (3 marks)
  3. Bhutan has been awarded polio free certificate by WHO recently. How long our country should continue Polio immunization? (2 marks)
  4. What is AEFI? Name some serious AEFI which require investigations. (3 marks)
- C. A 25 year old man was brought to the casualty following a road traffic accident. He complained of breathing difficulty and pain over the right chest. When he arrived, his vitals were normal. As you were taking history, he became more breathless and cyanosed. On auscultation, breath sounds were absent and it was resonant all over on percussion on the right chest.

**Answer the following questions (20 marks)**

1. Give two differential diagnoses. (2 marks)
  2. The condition of patient is deteriorating and you have to take immediate intervention in this case. What intervention is needed immediately to save his life? (3 marks).
  3. After the emergency procedure, his condition has improved. What further actions are required for proper management of this case? (5 marks)
  4. Where is the safe area in the chest for chest tube insertion? What do you understand by water seal drainage? (5 marks)
  5. After the chest tube insertion, this patient started complaining of swelling over the right chest and neck. On examination, crepitation was felt under the skin. What is this condition called? What could be the possible cause for this condition and how will you manage it? (5 marks)
- .....