

BLDE (DEEMED TO BE UNIVERSITY)
MBBS PHASE – I EXAMINATION

[Time :3 Hours]

[Max. Marks: 80]

PHYSIOLOGY – PAPER – I

QP CODE:1013

Your answer should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Each answer should be written on new page only.

Write Question No. in the middle of margin.

Long Essay: (Answer to be started on fresh page only)

2 X 10 = 20

1. A male patient of age of about 65 years presented to medical OPD with history of lightheadedness and dizziness, especially when standing up. He also complains of fatigue and occasional blurred vision. There was no chest pain/ shortness of breath. He is on treatment for hypertension (Tab. Amlodipine 10 mg once daily) & Type II Diabetes Mellitus (Tab. Metformin 500 mg twice daily) for last 10 years. Vital Signs :(on presentation): BP (lying): 96/60 mmHg & BP (2 minutes after standing): 80/50 mmHg, Heart Rate: 102 bpm, Respiratory Rate: 18 cycles /min, Temperature: 98.6°F & O₂ Saturation: 98% on room air. Physical Examination & Systemic examination of the patient were normal. Reports of relevant investigations were normal
 - a. What is the probable diagnosis?
 - b. What is the underlying mechanism for the production of this condition?
 - c. Discuss about long term mechanism of regulation of arterial blood pressure (1+3+6)
2. A male patient of 14 years age was brought to the pediatric OPD by his parents. Over the past few months, they noticed that he became easily tired during play, experienced mild breathlessness even on climbing stairs, and looked increasingly pale. He also complained of occasional headaches and dizziness. Following were the clinical findings: General appearance: Pale & mild icterus, Vitals: HR-102 bpm, RR-22/min, BP-110/70 mmHg & Oxygen saturation: 98% on room air. Systemic Examination revealed mild splenomegaly & No signs of respiratory /cardiac failure. Reports of Investigations were as follows: Complete Blood Count (CBC)- Hemoglobin: 7.2 g/dL (low), MCV-95 fL (normocytic), Reticulocyte count-Elevated & Peripheral blood smear-Presence of sickle cells. Liver function tests-Mildly elevated bilirubin (indirect) & Hemoglobin electrophoresis: HbS-85%, HbA- 0% & HbF-15%
 - a. What is the probable diagnosis? What type of hypoxia is encountered in this condition?
 - b. Discuss the mechanism of transport of Oxygen from lungs to tissues?
 - c. Write a short note on Bohr's Effect (2+6+2)

P.T.O

Short Essay: (Answer to be started on fresh page only)

6 X 5 = 30

3. Describe different mechanisms of active transport across the cell membrane
4. Explain the origin & spread of cardiac impulse
5. Explain the factors that influence venous return
6. What is dead space air? Mention its types. How is it measured?
7. Explain the structure of juxta-glomerular apparatus. What are its functions
8. Discuss about duties of a doctor

Short Answer: (Leave three lines gap between the answers)

10 X 3 = 30

9. Enumerate the factors influencing erythropoiesis
10. List the functions of plasma proteins
11. Enumerate the factors that prevent coagulation of blood within circulation
12. Define refractory period in a cardiac muscle. What is its significance?
13. What is P-R Interval? Mention its significance
14. What is P₅₀? Mention its significance
15. Lower Esophageal Sphincter
16. List the differences between hepatic & cystic bile
17. Components of renal filtration membrane
18. What is renal splay? Mention its importance

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[Time:3 Hours]

[Max. Marks: 80]

PHYSIOLOGY – PAPER – II
QP CODE:1014

Your answer should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Each answer should be written on new page only.

Write Question No. in the middle of margin.

Long Essay: (Answer to be started on fresh page only)

2 X 10 = 20

1. A 50-year-old woman presents with progressive weight gain, fatigue, cold intolerance, constipation, and hoarseness of voice. On examination, she has dry skin, puffiness around the eyes, non-pitting edema, bradycardia, and sluggish reflexes with delayed relaxation.
 - a. What is the probable diagnosis? Name the hormone involved?
 - b. Discuss the physiological functions and regulation of the concerned hormone
 - c. List the clinical features associated with this endocrine abnormality and explain the physiological basis for each (1+7+2)
2. A 60-year-old man presents with unsteady gait, frequent falls, and difficulty performing coordinated movements with his limbs. Neurological examination reveals a broad-based gait, intention tremor, dysdiadochokinesia, and horizontal nystagmus. There is no evidence of muscle weakness or sensory loss.
 - a. Name the most likely site of lesion
 - b. Describe the internal connections and the functions of the part of the brain involved in this condition
 - c. Justify why muscle strength remains intact despite the patient being unable to perform coordinated movements (1+7+2)

Short Essay: (Answer to be started on fresh page only)

6 X 5 = 30

3. Name the three cardinal clinical features of diabetes mellitus and explain the physiological basis for each.
4. Give the WHO classification of grades of exercise. Describe the cardiorespiratory adjustments to moderate exercise.
5. Describe the professional qualities and roles of a physician
6. With a neat, labelled diagram, describe the structure of Organ of Corti and its functions
7. Differentiate upper motor neuron lesion (UMNL) from lower motor neuron lesion (LMNL)
8. Describe the ovarian changes during menstrual cycle and correlate with the hormonal fluctuations.

P.T.O

Short Answer: (Leave three lines gap between the answers)

10 X 3 = 30

9. What is Renshaw cell inhibition?
10. What are the functions of Sertoli cells?
11. What is the physiological basis of neuromuscular hyperexcitability observed in hypocalcemic tetany?
12. Draw a labeled diagram of the taste pathway. List the abnormalities of taste sensation
13. What is rigor mortis? Explain its physiological basis
14. What is spermiogenesis? Enumerate the major changes occurring during this process
15. What is referred pain? Give examples for referred pain
16. What is macular sparing? Explain its physiological basis
17. What are the types of muscle contraction? Differentiate between them
18. List the functions of cerebrospinal fluid.