

MBBS-1st PROF. ANNUAL EXAMINATIONS; JULY-2018
[SUB.-PHYSIOLOGY-B; PAPER CODE: 01010102]

Time:-

Max. Marks: 50

OMR (Part-I): 00:15 Min.

Part-II & Part-III: 02:45 Hrs.

Instructions:-

1. Attempt all questions.
2. Write your Roll No. on the Question paper.
3. Candidate should ensure that they have been provided correct question paper. Complaints in this regard, if any, should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
4. Use **OMR Sheet** for **Par-I** and use separate answer books for **Part-II and Part-III**. Any mistake in this regard will be the responsibility of the examinee, and no complaint will be entertained after the examination. Parts of a question should be attempted in sequential order.
5. Draw diagram wherever required.

PART-I (OBJECTIVE TYPE QUESTIONS OMR SHEETS)

ATTEMPT ALL QUESTIONS:-

- Q. 1.** Which of the following parts of the eye has the greatest concentration of rods:- (1)
 a) Ciliary body b) Iris c) Optic disk d) Parafoveal region
- Q. 2.** A generator potential:- (1)
 a) always leads to an action potential
 b) increases in amplitude as a more intense stimulus is applied
 c) is an all-or-none phenomenon
 d) is unchanged when a given stimulus is applied repeatedly over time
- Q. 3.** Which of the following statements about neurotransmitters is true:- (1)
 a) All neurotransmitters are derived from amino acid precursors
 b) Small-molecule neurotransmitters include dopamine, histamine, ATP, glycine, enkephalin, and norepinephrine
 c) Large-molecule transmitters include ATP, cannabinoids, substance P, and vasopressin
 d) Norepinephrine can act as a neurotransmitter in the periphery and a neuromodulator in the CNS
- Q. 4.** A premenopausal woman who is physically active seeks advice from her primary care clinician regarding measures she can take to ensure adequate availability of dietary calcium to ensure bone health later in life. Which of the following dietary components should enhance calcium uptake:- (1)
 a) Protein b) Oxalates c) Iron d) Vitamin D
- Q. 5.** In infants, defecation often follows a meal. The cause of colonic contractions in this situation is:- (1)
 a) histamine
 b) increased circulating levels of CCK
 c) the gastrocolic reflex
 d) increased circulating levels of somatostatin
- Q. 6.** Which of the following ionic changes is correctly matched with a component of the action potential:- (1)
 a) Opening of voltage-gated K⁺ channels: After-hyperpolarization
 b) A decrease in extracellular Ca²⁺: Repolarization
 c) Opening of voltage-gated Na channels: Depolarization
 d) Rapid closure of voltage-gated Na channels: Resting membrane potential

- Q. 7. The functions of tropomyosin in skeletal muscle include:- (1)
- sliding on actin to produce shortening
 - releasing Ca^{2+} after initiation of contraction
 - binding to myosin during contraction
 - acting as a "relaxing protein" at rest by covering up the sites where myosin binds to actin
- Q. 8. On which of the following does aldosterone exert its greatest effect:- (1)
- Glomerulus
 - Proximal tubule
 - Thin portion of the loop of Henle
 - Cortical collecting duct
- Q. 9. Dehydration increases the plasma concentration of all the following hormones except:- (1)
- vasopressin
 - angiotensin II
 - aldosterone
 - atrial natriuretic peptide
- Q. 10. For the past several months, a 67-year-old woman experienced difficulty initiating and/or maintaining sleep several times a week. A friend suggested that she take melatonin to regulate her sleep-wake cycle. Melatonin secretion would probably not be increased by:- (1)
- stimulation of the superior cervical ganglia
 - intravenous infusion of tryptophan
 - intravenous infusion of epinephrine
 - stimulation of the optic nerve

(DESCRIPTIVE TYPE QUESTIONS)

PART-II

- Q.1. a) Describe the gait control theory of pain (5)
b) Describe the thalamic syndrome (3)
- Q.2. Write short notes on:-
- Conductive deafness (3)
 - Light reflex pathway. (3)
 - Role of Ca^{2+} in muscle contraction (3)
 - Denervation hypersensitivity (3)

PART-III

- Q.3. a) Renin angiotensin system (4)
b) Osmotic diuresis (4)
- Q.4. a) Composition and control of Gastric Juice (4)
b) Role of dietary fiber in food (3)
- Q.5. Write short notes on:-
- control of circadian rhythm (3)
 - Two types of acetylcholine receptors (2)

MBBS-1st PROF. ANNUAL EXAMINATIONS; JULY- 2018
[SUB.-PHYSIOLOGY-B; PAPER CODE: 01010102]
(RE-APPEAR)

Time: 03:00 Hrs.

Max. Marks: 50

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PART-I

- Q.1. What is spinal shock? What will happen on right side hemi section of spinal cord? (5)
- Q.2. Write short notes on:
- a) Referred pain. (3)
 - b) Cerebellar lesions. (3)
 - c) Stages of NREM sleep (3)
 - d) Juxta glomerular apparatus. (3)
 - e) Blood brain barrier (3)
- Q.3. Describe Parkinson's disease diagrammatically. (3)
- Q.4. Draw diagram of sarcomere. (2)

PART-II

- Q.5. Write differences between:
- a) Explicit Vs Implicit memory. (3)
 - b) Decerebrate Vs Decorticate rigidity. (3)
 - c) EPSP Vs IPSP (3)
 - d) Conditioned Vs Unconditioned reflexes. (3)
 - e) Myopia Vs Hypermetropia (3)
- Q.6. Draw diagram of visual pathway and its lesions. (3)
- Q.7. Write about photo transduction. (3)
- Q.8. Enumerate different gastrointestinal hormones. How they are secreted and what are their effects in short. (4)

MBBS-1st PROF. ANNUAL EXAMINATIONS; JULY- 2018
[SUB.: -BIOCHEMISTRY-B; PAPER CODE: 01010103]
(RE-APPEAR)

Time: 03:00 Hrs.

Max. Marks: 50

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5. Draw diagram wherever required.

PART-I

- Q.1. Write in brief:**
- a) Post translational modifications. (2.5)
 - b) Restriction Endonucleases. (2.5)
 - c) Oncogenes (2.5)
 - d) Initiation sites for transcription (2.5)
- Q.2. Write short notes on:**
- a) G proteins. (3)
 - b) applications of DNA Recombinant technology. (3)
 - c) RFLP. (3)
- Q.3. Write briefly:**
- a) Genetic Code. (2)
 - b) Human Genome project. (2)
 - c) Transgenic animals. (2)

PART-II

- Q.4. Write a note on Iron absorption. Mention briefly about Haemosiderosis and Haemochromatosis. (10)**
- Q.5. Write briefly:-**
- a) KFT. (2)
 - b) Wald visual cycle. (2)
 - c) Cytochrome P₄₅₀. (2)
- Q.6. Write short notes on:**
- a) Class switching. (3)
 - b) Antioxidants. (3)
 - c) Blood buffers. (3)

MBBS-1st PROF. ANNUAL EXAMINATIONS; JULY- 2018
[SUB.: -BIOCHEMISTRY-A; PAPER CODE: 01010103]
(RE-APPEAR)

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5. Draw diagram wherever required.

PART-I

- Q.1. Write short notes on:**
- a) Bicarbonate buffers. (2)
 - b) Obstructive Jaundice. (2)
 - c) Acute Intermittent Porphyria (2)
- Q.2. Write notes on:**
- a) Inhibitors of Electron Transport Chain. (5)
 - b) Secondary Active Transport. (5)
- Q.3. Explain in Brief:**
- a) Functions of Nucleotides. (3)
 - b) Classification of enzymes. (3)
 - c) Thalassemia. (3)

PART-II

- Q.4. Describe HMP Shunt Pathway. Explain the biochemical basis of Hemolytic anemia in G6PD Deficiency. (10)**
- Q.5. Explain the Biochemical Basis of the following:-**
- a) Essential Pentosuria. (3)
 - b) Hartnup Disease. (3)
 - c) Galactosemia. (3)
- Q.6. Write short notes on:**
- a) Purine Salvage Pathway. (2)
 - b) Chronic complications of Diabetes Mellitus. (2)
 - c) Carnitine Shuttle. (2)

(DESCRIPTIVE TYPE QUESTIONS)

PART-II

- Q.1. Describe HMP shunt pathway. Explain the biochemical basis of hemolytic anemia in G6PD Deficiency. (6+2=8)
- Q.2. Write short notes on:-
- a) Inhibitors of Electron Transport Chain (3)
 - b) Maple Syrup Urine Disease. (3)
- Q.3. Explain in brief:-
- a) Bicarbonate buffers (2)
 - b) Obstructive Jaundice. (2)
 - c) Acute Intermittent Porphyria. (2)

PART-III

- Q.4. Describe Beta - Oxidation of Palmitic acid. (6)
- Q.5. Write short notes on:-
- a) Acute complications of diabetes mellitus (3)
 - b) Essential fructosuria. (3)
- Q.6. Write short notes on:-
- a) Physiological jaundice (2)
 - b) Lesch -Nyhan Syndrome. (2)
 - c) Primary gout (2)

(DESCRIPTIVE TYPE QUESTIONS)

PART-II

- Q.1. Describe the process of DNA replication in Prokaryotes. Name two inhibitors of Replication. (6+2=8)
- Q.2. Write short notes on the following:-
- a) Post transcriptional modifications (2)
 - b) Wald Visual Cycle. (2)
 - c) PCR. (2)
- Q.3. Explain the following:-
- a) Metabolic acidosis (2)
 - b) Haemochromatosis. (2)
 - c) Specific Dynamic action. (2)

PART-III

- Q.4. Define Ketone bodies. Explain the synthesis of Ketone bodies. Add a note on Ketosis. (2+4+2=8)
- Q.5. Explain the following:-
- a) Liver Function Test (2)
 - b) Importance of SAM. (2)
 - c) Lac operon (2)
- Q.6. Write short notes on the following:-
- a) Phase II metabolism of Xenobiotics (2)
 - b) Class switching. (2)
 - c) Keshans disease (2)
