



**HBQ-7792** Seat No. \_\_\_\_\_

**First Year B. P. T. Examination**

**August - 2017**

**Human Physiology**

Time : **3** Hours]

[Total Marks : **100**

- Instructions :** (1) Write answers of each section in separate answer books.  
(2) Draw necessary diagrams.  
(3) Illegible writing will not fetch any marks  
(4) Figures to the right indicates marks of the question.

**SECTION - I**

- 1** Discuss on any two : **20**
- 1) Define haemostasis. Enumerate names of clotting factors. Describe extrinsic & intrinsic pathway of coagulation.
  - 2) Define Glomerular Filtration rate (GFR). Describe the factors affecting GFR.
  - 3) Define cardiac cycle. Describe pressure & volume changes during cardiac cycle with diagram.
- 2** Write briefly on any two. **10**
- 1) Surfactant.
  - 2) Functions of saliva
  - 3) Active transport.
- 3** Write in short on any five : **10**
- 1) What is Apoptosis?
  - 2) Define lung compliance.
  - 3) Enumerate functions of kidney.
  - 4) Chloride shift.
  - 5) What is Frank-Starling law of the heart?
  - 6) What is Buffer? Name the buffer systems present in blood.

- 4 Give answers of following MCQs from given options 10
- 1) Which of the following does not have cell membrane?
    - a) Nucleus
    - b) Nucleolus
    - c) Golgi apparatus
    - d) Mitochondria
  - 2) Serum does not contain :
    - a) Calcium
    - b) Prothrombin
    - c) Factor VII
    - d) Factor X
  - 3) Life span of RBC is
    - a) 120 days
    - b) 90 days
    - c) 60 days
    - d) 30 days
  - 4) The process by which WBCs squeeze through pores in capillary wall is:
    - a) Chemotaxis
    - b) Diapedesis
    - c) Pinocytosis
    - d) Opsonization
  - 5) Ventricular depolarization in ECG is seen as :
    - a) P-wave
    - b) QRS complex
    - c) T-wave
    - d) ST segment
  - 6) O<sub>2</sub> therapy is not effective in
    - a) Hypoxic hypoxia
    - b) Anaemic hypoxia
    - c) Ischemic hypoxia
    - d) Histotoxic hypoxia
  - 7) The natural rate of rhythmic impulse generation is greatest in which part of the heart?
    - a) Ventricular myocardium
    - b) Atrial muscles
    - c) Sinoatrial node
    - d) Purkinj fibers
  - 8) During exercise blood flow does not decrease in:
    - a) Cutaneous circulation
    - b) Hepatosplenchnic circulation
    - c) Coronary circulation
    - d) Renal circulation
  - 9) Cholagogues are the substances which cause:
    - a) Contraction of the gall bladder
    - b) Increase concentration of bile
    - c) Increase secretion of bile
    - d) Favour acidification of bile

- 10) The stomach secretes all of the following; except:
- |            |                      |
|------------|----------------------|
| a) Gastrin | b) Hydrochloric acid |
| c) Pepsin  | d) Intrinsic factor  |

## SECTION - II

- 5** Discuss on any two **20**
- 1) Describe the hormonal regulation of the human menstrual cycle.
  - 2) Describe posterior pituitary hormones.
  - 3) Classify various sensory modalities. Discuss receptors and pathways conducting pain and temperature sensations.
- 6** Write briefly on any two **10**
- 1) Organ of corti.
  - 2) Excitation contraction coupling in skeletal muscle.
  - 3) Lactation.
- 7** Write in short on any five **10**
- 1) What is saltatory conduction ?
  - 2) What is myasthenia gravis ?
  - 3) What is menarche?
  - 4) Name the different part of adrenal gland and the hormones secreted by them.
  - 5) What is accommodation reflex?
  - 6) What is reflex? Draw the reflex arc.
- 8** Give answers of following MCQs from given options **10**
- 1) Foot plate of stapes rests in :

a) Round window	b) Oval window
c) Tympanic membrane	d) Basilar membrane
  - 2) The posterior end of superior temporal gyrus in dominant hemisphere is location of :

a) Wernicke's area	b) Dajerine area
c) Broca's area	d) Exner's area

- 3) Which of the following eye structure having highest refractive index ?
    - a) Cornea
    - b) Lens
    - c) Aqueous humour
    - d) Vitreous humour
  - 4) Damage to which of the following structure leads to development of parkinson's disease?
    - a) Caudate nucleus
    - b) Putamen
    - c) substantia nigra
    - d) Subthalamic nucleus
  - 5) In the testis, the cells that secrete testosterone :
    - a) Germinal epithelium
    - b) Leyding cells
    - c) Sertoli cells
    - d) Sperm cells
  - 6) Phagocytosis within the central nervous system is done by:
    - a) Astrocyte
    - b) oligodendrocytes
    - c) Microglia
    - d) All of the above
  - 7) Which neurotransmitter is secreted by preganglionic sympathetic nerve fiber?
    - a) Epinephrine
    - b) Nor-epinephrine
    - c) Dopamine
    - d) Acetylcholine
  - 8) Nucleus Gracilis & Nuclues Cuneatus are the first synapse for
    - a) Dorsal column tract
    - b) Dorsolateral tract
    - c) Lateral spinothalamic tract
    - d) Medial spinothalamic tract
  - 9) All may be the cause of muscle weakness; except
    - a) Myasthenia gravis
    - b) Lamber-Eaton syndrome
    - c) Administration of curare
    - d) Neostigmine in therapeutic doses
  - 10) Medial geniculate body is concerned with
    - a) Hearing
    - b) Smell
    - c) Taste
    - d) Vision
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