

Roll No.

Total Pages : 03

CMDQ/D-23

6551

HUMAN PHYSIOLOGY

BCH-304-B

(CBCS)

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Section. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Briefly explain the following : **8×2=16**

- (a) Importance of mucus in gastrointestinal tract
- (b) Location and function of Brunner's glands
- (c) Oxygen dissociation curve
- (d) Glomerular filtration rate
- (e) Chemical synapses
- (f) Excitatory and inhibitory neurotransmitters
- (g) Catalytic function of adenylyl cyclase and cAMP phosphodiesterase
- (h) Physiological functions of progesterone.

Section A

2. (a) Explain the basic mechanism of stimulation of alimentary tract glands. **8**
(b) Explain digestion and absorption of lipids. **8**
3. (a) Write the composition, function and regulation of bile secretions. **10**
(b) Explain the functions of saliva for oral hygiene. **3**
(c) Describe the regulation of pancreatic secretion. **3**

Section B

4. (a) Describe the transport of O₂ and CO₂ by hemoglobin. **6**
(b) Explain the effect of 2,3-BPG on O₂ affinity of hemoglobin and clinical significance of 2,3-BPG. **10**
5. (a) Explain the renal mechanisms in the maintenance of blood pH. **10**
(b) Describe and draw the structure of nephron. **6**

Section C

6. (a) Describe the function of receptor proteins and secondary messengers on the post synaptic neuron. **6**

- (b) Describe the propagation of action potential as an impulse. **5**
(c) Explain intrinsic pathway for initiating blood clotting. **5**
7. (a) Write the characteristics of dopamine and GABA as neurotransmitters. **6**
(b) Write short note on α_1 -antitrypsin and haptoglobin as plasma proteins. **6**
(c) Describe physical and chemical characteristics of platelets. **4**

Section D

8. (a) Describe cell signalling through receptor tyrosine kinase. **10**
(b) Explain the role of Ca²⁺ ions as second messenger in signal transduction. **6**
9. (a) Write the mechanism of action of insulin hormone. **6**
(b) Describe in detail the physiological functions and regulation of thyroid hormones. **10**