



**JA-003-1016036**

Seat No. \_\_\_\_\_

**B. Sc. (Sem. VI) (CBCS) (W.I.F. 2016) Examination**

**August – 2019**

**Biochemistry**

**BC - 601 : Human Physiology and Clinical  
Biochemistry**

**Faculty Code : 003**

**Subject Code : 1016036**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- 1 (A) Answer the following in brief : (one mark for each question) **4**
- (1) Define hematocrit value.
  - (2) What is the main function of albumin as plasma protein?
  - (3) Why hemoglobin is known as buffer of blood?
  - (4) What is the role of calcium ions in blood coagulation?
- (B) Answer in brief : (Any **One** out of Two) **2**
- (1) Why males have more blood volume compared to females?
  - (2) Briefly describe leukopenia.
- (C) Answer in detail : (Any **One** out of Two) **3**
- (1) List functions of blood.
  - (2) Describe extrinsic pathway of blood coagulation.
- (D) Write note on : (Any **One** out of Two) **5**
- (1) What is polycythemia? How it can be diagnose and treat it?
  - (2) Classify anemia on the basis of morphological changes in RBC.

- 2 (A) Answer in brief : (Any **One** out of Two) 4
- (1) Draw the glandular structure of stomach showing different secretory cells.
  - (2) What is the composition of bile juice? Give its role in digestion.
- (B) Answer in brief : (Any **One** out of Two) 2
- (1) How saliva helps in digestion?
  - (2) How pepsin formation from pepsinogen occur in stomach?
- (C) Write in detail : (Any **One** out of Two) 3
- (1) Disorder due to improper digestion of fat.
  - (2) Describe role of small intestine in the digestion process.
- (D) Write note on : (Any **One** out of Two) 5
- (1) What are liver function tests? Give its diagnostic importance with examples.
  - (2) How secretion of parcreatic juice is regulated?
- 3 (A) Answer the following in brief : (one mark for each question) 4
- (1) Why kidney is known as retroperitoneal organ?
  - (2) Define juxtaglomerular cells of urinary tubules.
  - (3) Which part of nephron is involved in reabsorption of glucose after it is filtered through glomerulus?
  - (4) Which hormone enhances reabsorption of water from collecting tubules of nephrons?
- (B) Answer in brief : (Any **One** out of Two) 2
- (1) Mention role of  $\text{Na}^+\text{K}^+\text{ATPase}$  in tubular reabsorption.
  - (2) What is urea recycling?

- (C) Answer in detail : (Any **One** out of Two) **3**
- (1) Write a short note on glomerular filtration.
  - (2) Draw the labeled diagram of frontal section of kidney.
- (D) Write note on : (Any **One** out of Two) **5**
- (1) Explain the mechanism of formation of dilute urine.
  - (2) What are renal function tests? Mention any two of them with their clinical importance.
- 4 (A) Answer the following in brief : (one mark for each question) **4**
- (1) List basic functions of the nervous system.
  - (2) What is the importance of neurofibrils present in cell body of neuron?
  - (3) Define neurotransmitter giving suitable example.
  - (4) Give importance of voltage gated ion channels present in axons of nerve cells.
- (B) Answer in brief : (Any **One** out of Two) **2**
- (1) Differentiate between sympathetic and parasympathetic divisions of the nervous system.
  - (2) Define resting membrane potential and explain how it is maintained?
- (C) Answer in detail : (Any **One** out of Two) **3**
- (1) Draw a labelled diagram of the structure of neuron.
  - (2) Write brief note on chemical synapse.
- (D) Write note on : (Any **One** out of Two) **5**
- (1) Organization of nervous system
  - (2) Different types of glial cells present in central and peripheral nervous system and their functions.

- 5 (A) Answer the following in brief : (one mark for each question) 4
- (1) From which type of circulation left atrium receive the blood?
  - (2) Write the function of olfactory stimuli present in nasal cavity.
  - (3) Define respiratory zone.
  - (4) What is end diastolic volume?
- (B) Answer in brief : (Any **One** out of Two) 2
- (1) Exhalation is passive process; justify.
  - (2) What are the forms through which oxygen is transported?
- (C) Answer in detail : (Any **One** out of Two) 3
- (1) Discuss different anatomical parts of pharynx.
  - (2) Explain Dalton's law for gas exchange.
- (D) Write note on : (Any **One** out of Two) 5
- (1) Explain different waves of ECG.
  - (2) Factors that affect oxygen hemoglobin dissociation curve.
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