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P-003-001636 Seat No. _____

B. Sc. (Sem. VI) (CBCS) Examination

March / April - 2020

Biochemistry : Paper - BC-601

(Human Physiology & Clinical Biochemistry)

(Old Course)

Faculty Code : 003

Subject Code : 001636

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 Answer the following questions in just one or two lines : **20**

(1) Mention normal range for total RBC count in male and females.

(2) Under what conditions the total WBC count is increased?

(3) Name any four types of nutritional deficiency anemia.

(4) Which natural anticoagulant present in the human blood prevents its clotting during circulation?

(5) How stomach cells are protected against detrimental effects of HCl of gastric juice?

(6) Name the glycoprotein secreted in gastric juice that is important for absorption of Vitamin B_{12}.

(7) Give importance of lysozyme in salivary secretion.

(8) What do you understand by uricotelic organisms? Write examples.

(9) What is glomerular filtration rate (GFR)?

(10) Which hormone secreted by kidney is essential for maintaining the blood pressure?

(11) Name the organ in the human body that secrets erythropoietin.

(12) Describe the term lung capacity.

(13) Name the important organs of central nervous system.

(14) What effect does nor-epinephrine neurotransmitter has on heart beats?

(15) Write the normal values for systolic and diastolic blood pressure in humans.

(16) List the names of the valves present in the heart.

(17) Write the list of kidney function tests.

(18) What is the clinical significance of measuring the SGPT or ALT activity in the serum?

(19) If the glucose concentration in the blood was found to be 180 mg/dl, calculate the glucose concentration in the blood as m Moles/liter.
(Molecular weight of glucose = 180).

(20) How can you obtain plasma and serum from the blood?

2 (A) Answer Any **Three** of the following questions : **6**

(1) Write the functions of the plasma proteins.

(2) Describe gall stones.

(3) What is internal and external respiration?

(4) Write the three important steps involved in the mechanism of urine formation.

(5) Describe the function of microglial cells in the brain.

(6) Explain the non insulin dependent diabetes mellitus.

(B) Answer Any **Three** of the following questions : **9**

(1) Write the names of tests used to diagnose hemophilia.

(2) List the lipid digesting enzymes of pancreatic juice.

(3) Discuss plasma clearance test.

(4) What is Haldane effect? Discuss its significance.

(5) Write structural classification of neurons with suitable diagrams.

(6) Describe ECG.

(C) Answer Any **Two** of the following questions : **10**

(1) Describe the morphology, types and functions of different types of WBCs.

(2) Discuss the process of digestion and absorption of carbohydrates in human GIT.

(3) Describe myelin; write its composition, functions and distribution in the brain and spinal cord. How does the process of myelination differ in CNS and PNS?

(4) Discuss cardiac cycle.

(5) Write a note on sodium regulation by kidneys.

(6) Discuss different liver function tests.

3 (A) Answer Any **Three** of the following questions : **6**

(1) Write the functions of the kidneys.

(2) List the functions of the intestinal brush boarder cells.

(3) Difference between pulmonary and systemic circulation.

(4) Write the effect of tetrodotoxin from puffer fish on nerve impulse transmission.

(5) The respiratory gases oxygen and carbon dioxide are transported throughout the human body by which mechanism?

(6) Describe the term insulin dependent diabetes mellitus.

(B) Answer Any **Three** of the following questions : **9**

(1) What is the effect of carbon monoxide on transport of oxygen by hemoglobin?

(2) Write chemical composition and functions of saliva.

(3) Explain structure and function of upper respiratory tract using neat diagram.

(4) Discuss different events of the cardiac cycle.

(5) Write a short note on organization of the nervous system.

(6) Define anticoagulants and write examples and use of different types of anticoagulants.

(C) Answer Any **Two** of the following questions : **10**

(1) Write a short note on different types of thalassemia.

(2) Write a detailed note on enzymes of pancreatic juice and factors that control secretion of pancreatic juice.

(3) Discuss the role of the kidneys in acid-base balance.

(4) Describe the following terms with respect to nerve impulse transmission :

Resting membrane potential, depolarization, repolarization and the role of sodium-potassium ATPase.

(5) Write a detailed note on pneumonias.

(6) Discuss lactose intolerance.
