



PBG-003-1013022 Seat No. _____

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

November / December - 2018

Biochemistry : Paper - 301

(BC : Biomolecules)

Faculty Code : 003

Subject Code : 1013022

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

[Total Marks : 70

- 1 (a) Write the correct answer for the questions : 4
- (1) Define disaccharide and write example of disaccharide.
 - (2) Draw the Haworth structure of glucose.
 - (3) Write definition of heteropolysaccharide.
 - (4) Write the difference between amylose and amylopectin.
- (b) Write the Answer in Brief : (Any **One** out of Two) 2
- (1) Explain anomeric carbon with any one example.
 - (2) Define the term epimer with suitable example.
- (c) Write the Answer in detail : (Any **One** out of Two) 3
- (1) Explain reduction reaction of sugar with any one example.
 - (2) Write structural isomerism of carbohydrate.
- (d) Write the Short note in detail : (Any **One** out of Two) 5
- (1) Explain the classification of monosaccharide according to functional group and carbon number.
 - (2) Write a detail note on homopolysaccharides.

- 2 (a) Write the correct answer for the questions : 4
- (1) What do you understand by saponification value?
 - (2) Write the difference between saturated and unsaturated fatty acid.
 - (3) Define Reichert-Meissel (RM) number.
 - (4) Which phospholipids are found in the membrane?
- (b) Write the Answer in Brief : (Any **One** out of Two) 2
- (1) Write in brief about the biological functions of lipids.
 - (2) Phospholipids are amphipathic molecules, comment on it.
- (c) Write the Answer in detail : (Any **One** out of Two) 3
- (1) With examples and structure explain simple and mixed TAG.
 - (2) Write a brief account on lipoproteins.
- (d) Write the Short note in detail : (Any **One** out of Two) 5
- (1) Write an account of classification of lipids with one example of each class along with structure.
 - (2) Describe the structure of steroids. Add a note on the functions of cholesterol.
- 3 (a) Write the correct answer for the questions : 4
- (1) Definition : Defence protein
 - (2) Write the difference between standard and non-standard amino acid
 - (3) Write the full form of FDNB
 - (4) What you understand by isoelectric pH.
- (b) Write the Answer in Brief : (Any **One** out of Two) 2
- (1) How amino acids can perform as ampholytes?
 - (2) Write the importance of Sanger's reagent.

- (c) Write the Answer in detail : (Any **One** out of Two) **3**
- (1) Explain degradation of protein into smaller fragments for the determination of primary structure of protein.
 - (2) Amino acid classification based on their metabolic fate.
- (d) Write the Short note in detail : (Any **One** out of Two) **5**
- (1) Explain secondary structure of protein.
 - (2) Explain the classification of proteins.
- 4 (a) Write the correct answer for the questions : **4**
- (1) If a double stranded DNA has 25% Adenine, what percent Guanine, Thymine and Cytosine would you expect?
 - (2) What should be the length of 200 kbp long DNA?
 - (3) Describe denaturation and annealing of DNA.
 - (4) Explain briefly about functional RNA.
- (b) Write the Answer in Brief : (Any **One** out of Two) **2**
- (1) Explain nucleoside. (with one example & structure).
 - (2) Write the difference between RNA and DNA
- (c) Write the Answer in detail : (Any **One** out of Two) **3**
- (1) Give the experimental evidences that proved DNA is genetic material.
 - (2) Explain Double Helical structure of DNA with its labelled diagram.
- (d) Write the Short note in detail : (Any **One** out of Two) **5**
- (1) Explain packaging of DNA in Eukaryotic chromosome.
 - (2) Describe the types of RNA.

- 5 (a) Write the correct answer for the questions : 4
- (1) Deficiency of vitamin D cause the disease _____
 - (2) Write the types of porphyrins.
 - (3) Riboflavin is also known as _____
 - (4) Give the function of bile pigments.
- (b) Write the Answer in Brief : (Any **One** out of Two) 2
- (1) Name the complex formed by combination of Hb with oxygen.
 - (2) Give the four clinical features of porphyria.
- (c) Write the Answer in detail : (Any **One** out of Two) 3
- (1) Give the outline diagram of circulation and excretion of bile pigments.
 - (2) Write source, sign and symptoms of vitamin C
- (d) Write the answer in detail : (Any **One** out of Two) 5
- (1) Explain in detail breakdown of heme with diagram.
 - (2) Write a detail note on vitamin-A
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