

2021

BIOCHEMISTRY — GENERAL**Paper : GE/CC-1****Full Marks : 50***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer **any five** questions : 2×5
 - (a) Give example of two Disaccharides.
 - (b) Draw a dipeptide.
 - (c) Write two differences between Prokaryotics and Eukaryotics system according to their cell division.
 - (d) State the chemical nature of amino acids.
 - (e) Write the name of abundant polysaccharides in nature.
 - (f) Name one lipid which acts as surfactant.
 - (g) Why H_2O is called universal solvent?
 - (h) How Ca^{2+} acts as a 2nd messenger?

 2. Answer **any two** questions :
 - (a) (i) Draw the structure of four bases of DNA.
 - (ii) Give example of a basic amino acid. 4+1
 - (b) What is the biological significance of porphyrins ring? Name one disaccharides which present in milk. 3+2
 - (c) Write down the biological role of polysaccharides. 5
 - (d) Name two sulphur containing amino acids. Write down the structural features of peptides bond. 2+3

 3. Answer **any three** questions :
 - (a) (i) Write down the role of diacyl glycerol, Ca^{2+} in signal transduction pathway.
 - (ii) 'All water soluble vitamins act as a coenzyme.'— Explain. 5+5
 - (b) Classify the fatty acids according to their structure and essentiality with example. Briefly discuss the role of Vit-D in Ca absorption. 6+4
 - (c) Name two biologically important peptides with its functions. What is isoelectric point of amino acids? Name one imino amino acid and one modified amino acids with its structure. 4+2+4
 - (d) Name two metalloenzymes. How lipid molecule function as signal, cofactors and pigments? 2+8
 - (e) Mention two forms of unusual DNA structure. Briefly describe the biological significance of heme and cyanocobalamin. Name two second messengers in cell. 2+6+2
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