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 messangers in cell. 2+6+2