

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 154303

Roll No.

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B. TECH.

(SEM. III) THEORY EXAMINATION, 2015-16

BIOCHEMISTRY

[Time:3 hours]

[Maximum Marks:100]

Section-A

Note : Attempt **all** parts. All parts carry equal marks. Write answer of each part in short.

1. Put True (T) or False (F) in the space : (2x10=20)
 - (a) The nucleosome consists of core of eight sub-units of protein called histones containing DNA. ()
 - (b) The naturally occurring small peptide hormone secreted by pituitary gland is called insulin. ()
 - (c) The electrophoresis in presence of SDS separates the protein on the basis of charge. ()

- (d) The amino terminal residue in a polypeptide chain can be determined by 1, fluoro, 2, 4 dinitrobenzene ()
- (e) Myoglobin was the first protein for which the three dimensional structure was worked out by X-ray crystallography. ()
- (f) Ceruloplasmin is a protein which transports zinc. ()
- (g) Hypoxanthine is derived from adenine by replacement of its amino group with methoxy group. ()
- (h) Pyrimidines and purines which contain $-NH_2$ group are weakly basic. ()
- (i) β -structure is one of the most important secondary structures in protein. ()
- (j) Base composition of DNA varies from species to species. ()

Section-B

Attempt any five questions from this section : (10 x 5 = 50)

2. Explain the principle of Capillary Electrophoresis.
3. How is Ramchandran Plot used in determining Secondary structure of proteins ?
4. How glucokinase and insulin regulate blood glucose levels?
5. What is Henderson Hasselbach equation ?
6. Explain the differences of denaturation of protein by urea and guanidine hydro chloride.
7. Define the reasons for Wobble effect.
8. Cation-exchange resins be used for purification of protein.
9. What do you understand by homologous proteins. Explain giving suitable examples.

Section-C

Attempt **any two** questions from this section. (15x2=30)

10. Describe hemoglobin structure and its role in oxygen transport and release.
11. Describe two examples of diseases caused by altered protein conformation.
12. Explain De novo salvage pathways of pyrimidine nucleotides.

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