TDC (CBCS) Odd Semester Exam., 2022

BIOTECHNOLOGY

(3rd Semester)

Course No. : BTCSEC-301T

(Enzymology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Answer any *three* of the following : 1×3=3

(a) What is apoenzyme?

(b) Name the classes of enzymes.

(c) Give an example of protease.

(d) What do you mean by zymogen?

2. Answer any *one* of the following questions : 2

(a) Write a note on lyases.

(b) Give a brief account on isolation of enzymes.

3. Answer any *one* of the following questions : 5

(a) Give an account of crystallization of enzymes. Write briefly about test of homogeneity of enzyme preparation. 2+3=5

(b) Give a short account of purification of enzymes. Add a note on isomerases. 2½+2½=5

UNIT—II

4. Answer any *three* of the following questions : 1×3=3

(a) What is ES complex?

(b) Define K_m.

(c) What is active site?

(d) Define V_{max}.

5. Answer any *one* of the following questions : 2

(a) Write a note on enzyme specificity.

(b) Give a short account on activation energy.

6. Answer any *one* of the following questions : 5

(a) Describe various factors affecting the rate of enzyme action.

(b) Give an account on kinetics of enzyme activity. Explain Michaelis-Menten equation. 2+3=5

UNIT—III

7. Answer any *three* of the following questions : 1×3=3

(a) What is the function of lysozyme?

(b) What is RNase?

(c) What is chymotrypsin?

(d) Point out the function of carboxypeptidase.

8. Answer any *one* of the following questions : 2

(a) Write the features of aldolase.

(b) Briefly explain ping-pong mechanism of enzyme action.

9. Answer any *one* of the following questions : 5

(a) Give brief accounts on GPDH and alcohol dehydrogenase. Describe the mechanism of enzyme action in brief. 1½+1½+2=5

(b) Write about enzyme regulation. Add a note on covalent modification. 2+3=5

UNIT—IV

10. Answer any *three* of the following questions : 1×3=3

(a) What is the function of phosphofructo-kinase?

(b) Define allosteric enzymes.

(c) What is coenzyme?

(d) What do you mean by lactate dehydrogenase?

11. Answer any *one* of the following questions : 2

(a) Write a note on fatty acid synthase.

(b) Give a brief account on cooperativity.

12. Answer any *one* of the following questions : 5

(a) Write a note on ribozymes.

(b) Give an illustrated account on multienzyme complexes.

(Continued)

UNIT—V

13. Answer any *three* of the following questions : 1×3=3

(a) Name two enzymes used in industry.

(b) What is enzyme engineering?

(c) Define immobilized enzymes.

(d) What is protein sequencing?

14. Answer any *one* of the following questions : 2

(a) What do you mean by site-directed mutagenesis?

(b) Write a note on soluble enzymes.

15. Answer any *one* of the following questions : 5

(a) Describe delivery systems used in protein pharmaceuticals.

(b) Give a detailed account on large-scale production of enzymes.

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