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**DHANALAKSHMI SRINIVASAN COLLEGE  
OF ARTS & SCIENCE FOR WOMEN  
(AUTONOMOUS)**

(For Candidates admitted from 2019 - 2020 onwards)



**UG DEGREE EXAMINATIONS APRIL - 2021**

**B.Sc., - BIOCHEMISTRY**

**ENZYME**

**Time: 3 Hrs**

**Max.Marks: 75**

**PART - A**

**CHOOSE THE CORRECT ANSWER**

**(10X1=10)**

1. 'Enzymes are proteins', was suggested by
  - a) Pasteur
  - b) Miller
  - c) Leeuwenhoek
  - (d) Sumner
2. Which among the following has highest catalytic efficiency?
  - a) Catalase
  - b) Carbonic anhydrase
  - c) Urease
  - d) Pepsin
3. Factors affecting enzyme activity includes
  - a) Substrate concentration
  - b) Temperature
  - c) pH
  - d) All of these
4. The inhibition of succinic acid dehydrogenase by malonic acid is an example of
  - a) Competitive inhibition
  - b) Feedback inhibition
  - c) Allosteric inhibition
  - d) Irreversible inhibition
5. Enzymes used in detergents are
  - a) Amylases
  - b) Proteases
  - c) Lipases
  - d) Glucoisomerases
6. Decarboxylation of  $\alpha$ -keto acids requires
  - a) Thamine pyrophosphate, FAD,  $\text{NAD}^+$
  - b)  $\text{NADP}^+$
  - c) Flavin mononucleotide
  - d)  $\text{NAD}^+$  only
7. 'Lock' and 'Key' model of enzyme action proposed by Fisher implies that
  - a) The active site adjust to [S]
  - b) Active site is complementary
  - c) Active site require removal of  $\text{PO}_4$
  - d) Substrate change conformation
8. The active site of chymotrypsin consists of a catalytic triad of which of the following aminoacidresidues?
  - a) Serine, histidine and aspartate
  - b) Threonine, histidine and aspartate
  - c) Serine, histidine and glutamate
  - d) Methioine, histidine and aspartate

9. In feedback inhibition, a metabolic pathway is switched off by
- a) Competitive inhibition
  - b) Accumulation of end product
  - c) Denaturation
  - (d) Allosteric inhibition
10. Allosteric enzymes consist of multiple
- a) Inhibitors
  - b) Active sites
  - c) Polypeptide chains
  - d) Temperature ranges

### PART - B

#### ANSWER ALL THE QUESTIONS

(5X7=35)

11. a) Explain about metallo enzymes and metal activated enzymes.

(OR)

b) How enzymes are classified based on number of polypeptide chains?

12. a) What are the factors affecting enzyme activity?

(OR)

b) Explain about ping-pong reaction with example.

13. a) Give a detailed note on acid-base and covalent catalysis.

(OR)

b) Describe coenzymic action of thymine pyrophosphate.

14. a) Explain the mechanism of enzyme action by lock and key model.

(OR)

b) Elaborate on carboxy peptidase enzyme action in detail.

15. a) How proteolytic activation influence regulation of enzyme action?

(OR)

b) Write a note on feedback mechanism of enzyme action.

### PART - C

#### ANSWER ANY THREE QUESTIONS

(3X10=30)

16. How will you purify enzymes by affinity chromatography?

17. Write a detailed note on enzyme inhibition with examples.

18. Define immobilisation of enzymes and explain its types in detail.

19. Elaborate on mechanism of action of chymotrypsin.

20. Explain in detail about allosteric enzyme regulation.