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No. of Printed Pages : 2

SEAT No.

[151/153/166]

M. Sc. THIRD SEMESTER

MICROBIOLOGY/ BIOTECHNOLOGY/BIOCHEMISTRY EXAMINATION

MONDAY, DATE: 25-03-2019

PS03CMIC/BIT/BIC23 ENZYMOLOGY

**TIME: 2:00 to 5:00 pm**

**MAX. MARKS: 70**

Q. 1 Choose the correct answer

(08)

1. The plot of  $1/V_o$  v/s  $1/[S_o]$  is called as
  - a) MM plot
  - b) LB plot
  - c) secondary plot
  - d) Dixon plot
2.  $K_{cat}$  is
  - a) turnover number
  - b) MM constant
  - c) rate of reaction
  - d) dissociation constant
3. Which of these is not a primary plot
  - a) LB plot
  - b) Dixon plot
  - c) Arrhenius plot
  - d) all are primary plots
4. Gel permeation chromatography separates proteins based on their
  - a) solubility
  - b) polarity
  - c) size
  - d) N terminal aminoacid
5. Abzymes are
  - a) catalytic antibodies
  - b) synthetic enzymes
  - c) allosteric enzymes
  - d) ribozymes
6. Which of these is an oligomeric protein
  - a) chymotrypsin
  - b) lysozyme
  - c) carboxypeptidase
  - d) ATCase
7. Which of these are a part of catalytic triad of chymotrypsin
  - a) serine
  - b) histidine
  - c) aspartic acid
  - d) all of these
8. Under the effect of increasing temperature the rate of enzyme reaction
  - a) only increases
  - b) increases then decreases
  - c) only decreases
  - d) increases than remains constant

(1)

(P.T.O.)

**Q-2 Attempt: (Any Seven)**

**[14]**

- a. What is enzyme specific activity?
  - b. Write LB equation
  - c. What is substrate inhibition?
  - d. What is enzyme proficiency?
  - e. What is enzyme specificity?
  - f. What is the difference between  $K_b$  and  $K_s$ ?
  - g. What is partial inhibition?
  - h. Explain ping pong mechanism
  - i. Draw progress curve
- Q. 3 a) Explain any two methods of enzyme purification (06)  
b) Write a note on: (any one) (06)  
    i) Factors affecting enzyme activity  
    ii) Test of purity
- Q. 4 a) Derive MM equation (06)  
b) Derive an equation for competitive inhibition (06)  
    OR  
b) Explain various kinds of enzyme inhibitions (06)
- Q. 5 a) Explain the mechanism of Lysozyme action (06)  
b) Explain the working of hemoglobin (06)  
    OR  
b) Explain the structure of ATCase (06)
- Q. 6 a) Write a note on: Applications of enzyme engineering (06)  
b) Write a note on: (any one) (06)  
    i) Isozymes  
    ii) Enzymes as analytical reagents

