

T.Y.B.SC. SEM – V (2014 COURSE) : WINTER - 2017

SUBJECT: MICROBIOLOGY -ENZYME KINETICS & REGULATION

Day : Friday

W-2017-0666

Time: 3.00 P.M. To 5.00

Date : 03/11/2017

Max. Marks: 40

P.M.

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to right indicate **FULL** Marks.
 - 3) Draw neat **DIAGRAM** wherever necessary.
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Q.1 Attempt ANY THREE (15)

- a) Describe in brief any one method of enzyme purification based on molecular size.
- b) Define oligomeric enzyme. Describe the properties and structure of any one oligomeric enzyme.
- c) What is enzyme assay? Explain the principle, method and applications of spectrophotometric method of enzyme assay.
- d) Describe the structure and kinetic behaviour of allosteric enzyme.
- e) Write note on 'Competitive inhibition'.

Q.2 Attempt ANY THREE (15)

- a) Explain the principle of feedback inhibition mechanism of enzyme regulation with a suitable example.
- b) Write note on 'Monomeric enzymes.'
- c) Describe the entrappment method for immobilization of an enzyme.
- d) Derive the Michaelis-Menten equation.
- e) Write note on 'Zymogens'

Q.3 Attempt ANY FIVE (10)

- a) What is IUB system of enzyme classification?
- b) Give the significance of K_m and V_{max} .
- c) Draw the structure of Pyruvate dehydrogenase.
- d) Give coenzyme form of Riboflavin and state the reaction catalyzed.
- e) Diagrammatically illustrate the principle of Ion-Exchange chromatography.
- f) Give any two points of differentiation between Uncompetitive and Noncompetitive inhibition
- g) Define with a suitable diagram Density gradient centrifugation

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