



RF-3751-52
First Year M. Sc. Examination
April/May – 2010
Biotechnology

Time : 3 Hours]

[Total Marks : 100

RF-3751

Instructions :

(1)

<p>नीचे दृशविले निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : First Y. M. Sc.</p> <p>Name of the Subject : Biotechnology</p> <p>Subject Code No. : 3 7 5 1 Section No. (1, 2,.....) : 1</p>	<p>Seat No. : <table border="1" style="width: 100%; height: 20px;"><tr><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 15%;"></td></tr></table></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; margin-top: 10px;">Student's Signature</div>						

- (2) All questions are **compulsory**.
- (3) Figures to the right indicate full marks of the question.
- (4) Indicate clearly the options you attempt.
- (5) Both sections must be written in separate answer books.

- 1 Answer the following in short: 5
- (a) Define: Chemical bond
 - (b) Define: Molecularity of a reaction.
 - (c) State zeroth law of thermodynamics.
 - (d) Define acid and base on the basis of Arrhenious theory.
 - (e) What is an emulsifier?
- 2 (a) Draw MO energy level diagram for F_2 molecule. 10
Explain its bond order and magnetic property.
- (b) Define: Hybridisation. Explain sp^3 -hybridisation in ethene ($CH_2=CH_2$) molecule.

OR

- 2 (a) Write a note on reducing and non-reducing sugar. 10
(b) Explain: Splitting of d-orbitals in octahedral complex.
- 3 (a) What is meant by rate of a reaction? Explain the graphical method for the determination of order of reaction. 10
(b) What are acid base indicators? Explain, which indicator is useful for the particular acid-base titration.

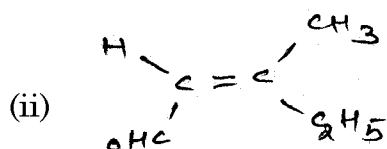
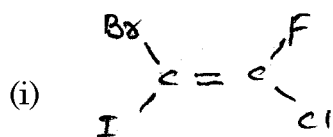
OR

- 3 (a) Bring out the points of difference between order and molecularity of a reaction. 10
(b) Prove that all spontaneous process are accompanied by an increase of entropy.
- 4 (a) Describe any one dispersion method for the preparation of colloidal solution. How will you purify the colloidal solution by dialysis method? 10
(b) Write short notes on "Induced radioactivity" and "Radioimmunoassay".

OR

- 4 (a) Distinguish between physical adsorption and chemisorption. 10
(b) What is an emulsion? What are different type of emulsions? How do you differentiate between them?

- (b) Explain E and Z designation and assign E and Z to following with reasons:



- 7 (a) Explain the classification of protein. **10**
 (b) Explain the role of hemoglobin in transportation of O₂ and CO₂.

OR

- 7 (a) Explain: any two method for synthesis of amino acid. **10**
 (b) Write a note on ring structure of glucose.

- 8 (a) Explain number average and weight average molecular weights of polymer. **10**
 (b) Describe viscosity method for the determination of molecular weight of polymer.

OR

- 8 (a) Describe industrial production and one application of Nylon-6 and polystyrene. **10**
 (b) Write short notes on:
 (i) Antibiotics
 (ii) Antimalarial