



RF-3692-93

M. Sc. (Microbiology) (Part-II) Examination
April / May – 2010

Paper-VI : Microbial Physiology & Metabolism

Time : 3 Hours]

[Total Marks : 52

Instructions :

(1)

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|--|---|
| नीचे दृशविले निशानीवाणी विगतो उत्तरवही पर अवश्य लखवी. Fillup strictly the details of signs on your answer book. | Seat No. : |
| Name of the Examination : | <input type="text"/> |
| M. Sc. (Microbiology) (Part-2) | <input type="text"/> |
| Name of the Subject : | <input type="text"/> |
| P-6 : Microbial Physiology & Metabolism | <input type="text"/> |
| Subject Code No. : <input type="text" value="3"/> <input type="text" value="6"/> <input type="text" value="9"/> <input type="text" value="2"/> | Section No. (1, 2,.....) : <input type="text" value="Nil"/> |
| Student's Signature | |

- (2) Figures to the **right** indicate **full** marks of the question.
- (3) Draw **neat** and **labelled** diagrams whenever **necessary**.
- (4) **Both** sections must be written in **separate** answer books.

- 1 (a) Discuss in detail about membrane transport mechanism giving suitable examples. 8
- (b) Elaborate on coordinated control of amino acid synthesis. 8

OR

- 1 (a) Discuss in detail about the growth kinetics of microorganisms in presence of a growth limiting substrate. 8
- (b) What do you mean by morphogenesis ? Discuss in detail about pleomorphism in bacteria. 8
- 2 Justify the following : (any **three**) 9
- (a) Standard free energy change is directly related to equilibrium constant.

- (b) Enzyme catalyzed reactions are mixed-order reactions.
- (c) It is difficult to maintain synchronous culture for many generations.
- (d) Gluconeogenesis is not the exact reversal of glycolysis.
- (e) Channel proteins and carrier proteins are involved in facilitated diffusion.

3 Elaborate on various pathways for nitrogen fixation used by various bacteria. **12**

OR

3 Derive Michaelis-Menton equation and give its significance. Elaborate on single and multi-substrate kinetics of enzymes. **12**

4 Write short notes on : (any **three**) **15**

- (a) Fatty acid oxidation
- (b) Gibbs free energy and its significance
- (c) Sporulation
- (d) Tubidostat
- (e) Siderophore synthesis.
