



RB-0732
Second Year B. Sc. Examination
April / May – 2010
Microbiology : Paper - IV
(Microbial Nutrition, Growth & Control)

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

<p>નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : S. Y. B. Sc.</p> <p>Name of the Subject : Microbiology - 4</p> <p>Subject Code No. : 0 7 3 2 Section No. (1, 2,.....) : Nil</p>	<p>Seat No. : <input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> <div style="border: 1px solid black; border-radius: 15px; height: 80px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">Student's Signature</div>
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- (2) Figures to the right indicate full marks of the question.
(3) Draw neat diagram wherever necessary.

1 Give specific answers : 16

- (a) Giving suitable examples define enriched media and enrichment media.
- (b) What is Tyndallization? State its limitation.
- (c) Explain 'Mixotrophs' with a suitable illustration.
- (d) On what basis the duration of exposure is decided to achieve sterilization?
- (e) Explain the terms : 'Selective toxicity' and 'Therapeutic index'.
- (f) Give the significance of employing the 'use-dilution' and 'in-use' tests.
- (g) What are 'DPS proteins'? State their role.
- (h) State the limitations of using ethylene oxide as sterilant.

- 2** Explain/Comment on any **three** of the following : **15**
- (a) Plasma membrane proteins facilitate the diffusion of nutrients.
 - (b) A bacterial growth curve demonstrates the dynamics of growth.
 - (c) Primary isolation media differs from diagnostic media.
 - (d) Filtration traps microorganisms.
 - (e) Quats are effective antimicrobial detergents.
- 3** Attempt any **two** of the following : **12**
- (a) Define serum bactericidal titre. Describe the dilution susceptibility test for determination of MIC.
 - (b) Name the different modes of cell division in bacteria and explain the most common mode with a schematic diagram.
 - (c) Discuss the characteristics of an ideal antimicrobial chemical agent.
- 4** Elaborate on physical conditions required for cultivation of bacteria. **12**
- 5** Write short notes on any **three** of the following : **15**
- (a) Penicillins - source, structure and action
 - (b) Biomass determination
 - (c) Ionizing radiations
 - (d) The variables in disinfection
 - (e) Halogens as antimicrobial agents.
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