

M.Sc Sem.-2 Examination

P - 407

Microbiology

June 2022

Time : 2-00 Hours]

[Max. Marks : 50

Instructions:

All questions in Section-I carry equal marks. Attempt any **THREE** questions in section I
All questions in Section-II are **compulsory** and each carries **1 mark**

Section-I

- | | | | |
|-----|----|---|---|
| Q-1 | A. | Write about the isolation of industrially important microorganisms. | 7 |
| | B. | Write about the methods of preservation for industrially important microorganisms. | 7 |
| Q-2 | A. | Describe the nitrogen sources commonly used in industry for media preparation. | 7 |
| | B. | Discuss the optimization of medium by Plackett-Burman design. | 7 |
| Q-3 | A. | Describe the monitoring and control of temperature and pH in fermenters. | 7 |
| | B. | Discuss the PID control system. | 7 |
| Q-4 | A. | Discuss the design of a batch fermenter with single multi-bladed impeller. | 7 |
| | B. | Explain the monitoring and control of flow and pressure in fermenters. | 7 |
| Q-5 | A. | Discuss large-scale continuous sterilization of fermentation media using moist heat. | 7 |
| | B. | Give a detail note on fungal inoculum development program with suitable example. | 7 |
| Q-6 | A. | What is K_{La} ? Discuss the factors affecting K_{La} . | 7 |
| | B. | Write in detail the fundamentals of scale-up and the problems associated with scale-up. | 7 |
| Q-7 | A. | Discuss in detail about size exclusion chromatography. | 7 |
| | B. | Detailed note on physico-mechanical methods for cell disruption. | 7 |
| Q-8 | A. | Discuss cross flow filtration technique. | 7 |
| | B. | Recycling of substances and its role in reducing production cost. | 7 |

Section-II

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|-----|----|---------------------------------------|---|
| Q-9 | 1. | Auxotrophic mutant | 1 |
| | 2. | Give four examples of antifoams. | 1 |
| | 3. | Thermistors | 1 |
| | 4. | Rotameter | 1 |
| | 5. | Define - cropping | 1 |
| | 6. | What is Power Number? | 1 |
| | 7. | What is sedimentation coefficient? | 1 |
| | 8. | What is reverse phase chromatography? | 1 |

