

This question paper contains 3 printed pages]

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S. No. of Question Paper : 13454

Unique Paper Code : 2534001005

Name of the Paper : Microbial Quality Control and Testing

Name of the Course : Microbiology

Semester : VII (Part-IV)

Duration : 2 Hours

Maximum Marks : 60

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any five questions.

All questions carry equal marks.

1. Write short notes on the following (any three) : 3×4=12

(a) Biosensor based detection

(b) Resazurin Reduction Test

(c) Principles of HACCP

(d) Clot on boiling test.

2. Explain the following terms (any six) : 6×2=12

(a) Personal Protective Equipment

(b) Limulus Lysate test

(c) Microbial limits of sterility testing

P.T.O.

- (d) Selective media
 - (e) Multiplex PCR
 - (f) Biosafety cabinets
 - (g) Differential media.
3. (a) Explain the principle and application of membrane filtration method in bioburden testing. 4
- (b) Describe the principle and method of any *one* technique used for antimicrobial susceptibility testing. 4
- (c) What are the BIS and FSSAI, and how do they contribute to food safety? 4
4. (a) Compare microscopic and culture based methods for microbial detection. 6
- (b) Mention any *two* ISO certifications relevant to food or pharmaceutical industries. 2
- (c) Explain the procedure and principle of the Most Probable Number (MPN) test. 4
5. (a) How can nucleic acid probes be used for detection of microorganisms? 4
- (b) Provide examples of microorganisms handled at each biosafety level (BSL-1 to BSL-4). 4
- (c) Discuss the key criteria for ensuring drinking water potability. What role do quality control strains play in this process? 4
6. (a) Explain the key principles of Good Microbiological Laboratory Practices (GMLP). How do they contribute to lab safety and quality? 6

- (b) Why is it important to validate sterilization methods and culture media in microbiological testing ? 2
- (c) Describe the phenol coefficient test and its role in determining disinfectant efficacy. 4