

B.Sc. Semester - 5 (NEP-2020) Examination

Oct/Nov - 2025

MIC: Microbial Practice in the Ancient Indian System (Major-12)

Time: 2:00 Hours

Marks: 50

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

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| Que.1 | (1) Explain the concept of Ayurveda and its relevance to modern microbiology. (05) |
| | (2) Compare the principles of disease causation in Ayurveda with those in modern microbiology. (05) |
| OR | |
| Que.1 | (1) Discuss the possible antimicrobial effects of metallic preparations like <i>Bhasma</i> . (05) |
| | (2) Explain the role of plant-based decoctions (<i>Kadha</i>) in traditional medicine and their potential microbial targets. (05) |
| Que.2 | (1) Describe the microbial succession involved in traditional <i>curd</i> preparation in India. (05) |
| | (2) Explain how fermentation contributes to the texture and taste development in <i>idli</i> and <i>dhokla</i> . (05) |
| OR | |
| Que.2 | (1) Explain the microbiological basis for the shelf-life extension of <i>pickles</i> in traditional fermentation methods. (05) |
| | (2) Outline the fermentation process of an ancient Indian alcoholic beverage and its key microbial players. (05) |
| Que.3 | (1) Explain the preparation and microbial significance of <i>Panchagavya</i> in traditional Indian agriculture. (05) |
| | (2) Describe the composition and role of <i>Jeevamrut</i> as a biofertilizer in sustainable farming. (05) |
| OR | |
| Que.3 | (1) Outline the principles of plant-based pest control methods practiced in ancient India. (05) |
| | (2) Explain the microbiological basis of <i>Agnihotra</i> and its claimed benefits in plant disease management. (05) |
| Que.4 | (1) Explain the microbial role in green manure decomposition and its effect on soil fertility. (05) |
| | (2) Describe how vermiculture contributes to nutrient cycling and soil microbial activity. (05) |
| OR | |
| Que.4 | (1) Discuss the importance of <i>animal dung</i> and <i>crop residues</i> in traditional soil fertility management. (05) |
| | (2) Explain the working and ecological significance of <i>stepwells</i> in ancient rainwater harvesting systems. (05) |
| Que.5 | (1) Highlight how traditional formulations like <i>Churna</i> could be scientifically evaluated for antimicrobial activity. (05) |
| | (2) Discuss the Ayurvedic concept of probiotics and its correlation with modern understanding of gut microbiota. (05) |
| OR | |
| Que.5 | (1) Discuss sustainable microbial approaches for organic and chemical-free livestock farming in ancient India. (05) |
| | (2) Explain the microbial and physicochemical basis of charcoal and sand filters for water purification. (05) |
