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S.No. 2923

P 22 FSE 1 A

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Food Service Management and Dietetics – Elective

APPLIED FOOD MICROBIOLOGY (THEORY)

Time : Three hours

Maximum : 75 marks

SECTION A — (20 marks)

Answer ALL questions.

I. (A) Choose the correct answer: (5 × 1 = 5)

1. Father of Microbiology is _____.

- (a) Louis Pasteur
- (b) Antonie van Leeuwenhoek
- (c) Lazzaro Spallanzani
- (d) Matthias Jakob Schleiden

- 2. SCP is commonly grown on agricultural waste products, as inherits of _____ and _____ foot prints.
 - (a) biological and water
 - (b) biological and ecological
 - (c) ecological and water
 - (d) ecological and soil
- 3. Which organisms produces bacitracin?
 - (a) B. subtilis and B. licheniformis
 - (b) B. subtilis and B. tricobacter
 - (c) B. licheniformis and B. coliform
 - (d) B. licheniformis and B. tricobacter
- 4. Who invented Micro-algae?
 - (a) Martinus Luther Beijerinck
 - (b) Martinus William Beijnick
 - (c) Martinus William Beijnick
 - (d) Martinus Willem Beijerinck
- 5. Nanotechnology has reduced the pollutants in food industries through _____.
 - (a) bio-degradable nanomaterials
 - (b) eco-friendly nanomaterials
 - (c) bio-decomposable nanomaterials
 - (d) ecological nanomaterials

(B) Fill in the blanks: (5 × 1 = 5)

6. Bacterial spores are of concern to the food industry due to their ability in decreasing the _____ and _____ of foods.
7. Single cell proteins are referred to as _____ microorganisms.
8. Glutamic acid is obtained from _____ and _____ products.
9. Microalgae have shown potential to directly capture emitted _____ from the atmosphere.
10. Give an example of organic nanomaterial.

II. Answer the questions: (5 × 2 = 10)

11. Write a note on the scope of applied food microbiology.
12. List the advantages of SCP.
13. What is enzyme immobilization?

14. Define biotechnological potential of microalgae?
15. Write on the role of microbial nanotechnology in food industry.

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

16. (a) Give a brief note on the significance of spores in applied food microbiology.

Or

- (b) Write a brief note on the history of applied food microbiology.

17. (a) Explain the microbial production of SCP in bacteria.

Or

- (b) Write a detailed note on mushroom cultivation.

18. (a) Explain the industrial application of riboflavin.

Or

- (b) Give a brief note on industrial production of wine.

19. (a) Write on the nutraceuticals and H₂ gas production from BGA.

Or

- (b) What are the pharmaceutical values of protein in microalgae?
20. (a) Write a note on the advantages and disadvantages of microbial nanoparticles.

Or

- (b) Give the food industrial importance of nanotechnology.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

21. Give a detailed note on the different types of microorganisms associated with foods.
22. Write a brief note on SCP.
23. Write a note on fermentation processes involved in industrial production of Streptomycin and Gibberellins.

24. Explain in detail the feed production of microalgae in pigmentation and protein.
25. Give a brief explanation on sources, food grade nanoparticles and their advantages.
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