

PH 501.4

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St. Aloysius College (Autonomous)  
Mangaluru  
Semester IV – P.G. Examination - M.Sc. Biotechnology

July - 2022

**FOOD BIOTECHNOLOGY**

Time: 3 Hours

Max. Marks: 70

Note: Draw neat labeled diagrams/schematic sketches/structures wherever necessary

**I. Write short notes on any FIVE of the following (5x3=15)**

1. What are probiotics? Explain its nutraceutical benefits.
2. Summarize the function of FSSAI.
3. Write a note on the traditional method of Tempeh preparation
4. Discuss on the requirements of Spirulina Cultivation.
5. List down three food borne pathogens and name the infection caused by them.
6. Explain the processing of pasteurization of milk.
7. Explain the different types of blanching.
8. Define rancidity. List the factors associated in fat rancidity.

**II. Write explanatory notes on any FIVE of the following. (5x5=25)**

9. Comment on the cultivation of mushroom.
10. Mention in brief the seven principles of HACCP.
11. Explain the biochemical changes in enzymatic browning.
12. Explain the types of organisms associated with milk and explain the best processing method for preservation.
13. Explain the importance of refrigeration as a preservative technique.
14. Detail out on few natural preservatives.
15. Elaborate upon the food grading system with the help of examples.
16. Explain the process of manufacture of Swiss cheese.

**III. Answer any THREE of the following. (3x10=30)**

17. What are food additives? Explain its different types and functions.
18. Explain the production of beer in detail.
19. Explain the causes and mechanism of spoilage in canned foods.
20. Explain the concepts of quality of food.
21. Explain the mechanism of action of exotoxins (enterotoxins) and endotoxins.

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**St. Aloysius College (Autonomous)**  
**Mangaluru**  
**Semester IV - P.G. Examination - M.Sc. Biotechnology**

July - 2024

**IMMUNOLOGY**

Time: 3 Hours

Max. Marks: 70

Note: Draw neat labeled diagrams/schematic sketches/structures wherever necessary

**I. Write short notes on any FIVE of the following. (5x3=15)**

1. Antigens and Adjuvants
2. V,D,J gene segment
3. Cytokine antagonists
4. Type IV hypersensitivity reaction
5. Immunological tolerance
6. HLA tissue typing techniques
7. Western Blot
8. Immunotoxins

**II. Write explanatory notes on any FIVE of the following. (5x5=25)**

9. Discuss on structure and functions of Immunoglobulins
10. Explain immunodiffusion
11. Describe Type I hypersensitivity reactions
12. Write a note on alternate pathway of complement activation
13. Give an account on graft vs host disease
14. Give an account on tumor antigens
15. Explain in detail on ELISA
16. Discuss on edible vaccines

**III. Answer any THREE of the following. (3x10=30)**

17. Explain cells of immune system. Add a note on Thymus.
18. Explain factors affecting immunogenicity. Add a note on the route of antigen administration.
19. Discuss on Systemic Lupus Erythematosus.
20. Explain monoclonal antibody and their functions. Add a note how it differs from polyclonal antibodies.
21. Give an detailed account on tuberculosis.

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**St. Aloysius College (Autonomous)**  
**Mangaluru**  
**Semester IV – P.G. Examination - M.Sc. Biotechnology**  
**July - 2020**  
**IPR AND CLINICAL RESEARCH**

Time: 3 Hours

Max. Marks: 70

Note: Draw neat labeled diagrams/schematic sketches/structures wherever necessary

**I. Write short notes on any FIVE of the following. (5x3=15)**

1. NOEL
2. Principles of ICH-GCP
3. Research integrity
4. Trademarks
5. Informed Consent Form
6. Biopiracy
7. Differentiate Patent and Company Secrets
8. GDP in drug manufacturing

**II. Write explanatory notes on any FIVE of the following. (5x5=25)**

9. Enumerate the salient features of Copyright Act.
10. Explain the need of ethics for clinical trials with suitable example.
11. What is the role of World Intellectual Property Organization?
12. Write a detailed note on randomized controlled trial.
13. Discuss CPCSEA guidelines for animal experimentation
14. Explain geographical indication and its importance.
15. Write a detailed account on Investigational new drug application.
16. Explain *In silico* assay method for drug development.

**III. Answer any THREE of the following. (3x10=30)**

17. Differentiate between Trademark and Copyright. What is the process of registering a copyright?
18. Illustrate the various responsibilities of key stakeholders in clinical research.
19. Describe the various stages in drug development.
20. What is patent? Briefly explain the process of patent filing. How does a patent help in R and D?
21. Explain various animal models for pre-clinical research.

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