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**St Aloysius College (Autonomous)
Mangaluru**

Semester IV – P.G. Examination - M.Sc. Biotechnology

May/June – 2023

ST.ALOYSIUS COLLEGE
PG Library

FOOD BIOTECHNOLOGY MANGALORE-575 003

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. USFDA
2. Bacterial endotoxins
3. Spirulina cultivation
4. Tempeh
5. Rancidity
6. FSSAI
7. Pickling
8. Pasteurization

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

9. Natural preservatives
10. Mushroom cultivation
11. Mechanisms of action of exotoxins
12. Sensory evaluation of food
13. Neutragenomics
14. Irradiation for food preservation
15. Applications of pullulan in food industry
16. Common moulds associated with food spoilage

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

17. Elaborate on various food quality standards.
18. Explain in detail the different types of biochemical changes in food during spoilage.
19. Write a detailed note on food additives.
20. Write an explanatory note on the production of beer.
21. What are the major food spoilage microorganisms in canned food? Explain the mechanisms by which they induce food spoilage?

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St Aloysius College (Autonomous)**Mangaluru****Semester IV – P.G. Examination - M.Sc. Biotechnology****May/June – 2023****MOLECULAR DIAGNOSTICS AND IMMUNOTECHNIQUES****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.****(5×3=15)**

1. Nested PCR
2. Viral transport medium
3. Principle and applications of immunohistochemistry
4. Symptoms of fragile X syndrome
5. ELISPOT assay
6. Surface plasmon resonance
7. Plasma therapy
8. mRNA vaccine

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

9. How multiplex PCR is used in detection of food borne pathogens?
10. Give an account on determination of paternity.
11. Explain NGS based diagnostic cancer assay for BRCA1/2 mutation.
12. Write a note on predictive biomarkers for personalized onco-therapy of breast cancer.
13. Write a note on comet assay.
14. Describe cytokine expression assays.
15. Discuss on transfusion of immuno-competent cells.
16. Give an account on phage display techniques and its applications.

III. Answer any THREE of the following:**(3×10=30)**

17. Describe Real time PCR based molecular diagnosis of disease Covid 19.
18. Explain diagnostic metabolomics using LCMS and NMR.
19. Give an account of ELISA technique and its applications.
20. Discuss on recombinant DNA vaccine.
21. Explain and differentiate monoclonal and polyclonal antibodies with applications.

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Semester IV – P.G. Examination - M.Sc. Biotechnology
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CLINICAL RESEARCH, IPR AND PATENTS

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. Good manufacturing practices
2. Dose response curve
3. Principles of ICH -GCP
4. Kefauver Amendments
5. Role of QA in clinical trials
6. Biopiracy
7. TRIPS
8. Distinguish between Pharmacodynamics & Pharmacokinetics

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

9. Discuss the Absolute grounds for Refusal of registration of TradeMarks.
10. Write a note on good documentation practices.
11. Describe the CPCSEA guidelines for animal experimentation.
12. Elaborate on toxicity testing methods.
13. Discuss the responsibilities of the Ethics Committees and Institutional Review Board.
14. Write a note on Trademarks and Trade secrets.
15. Discuss the guidelines in clinical research.
16. Explain geographical indication with examples.

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

17. What is an invention within the meaning of Patents Act, 1970? What requirements must an invention fulfill in order to be patentable? Which inventions cannot be patented?
18. Elaborate on the informed consent and case report form.
19. Discuss different phases of drug development.
20. Explain the subject matter of copyright with the help of examples. Are collective work and derivative work also copyrightable? Can an owner transfer his copyright to others? What is the fair use of a copyright?
21. Explain the various types of clinical research. Discuss the phases of clinical trials.