PH 501.4

Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

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

August / September 2021

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. Probiotics
2. Food regulations - FSSAI
3. Refrigeration
4. Microbial food poisoning
5. Miso preparation
6. Chitosan
7. Blanching
8. Types of contaminants in food

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

9. Types of anti-nutritional factors
10. Principles of HACCP
11. Factors affecting micro organism growth in food.
12. Mechanism of action of exo toxins and endo toxins
13. Preservation by dehydration
14. Production of Swiss cheese
15. Single cell protein
16. Natural preservatives

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

17. Explain in detail on any four types of microbial exopolysaccharides
18. Elaborate on beer production
19. Discuss on canning of foods
20. Explain the mechanism of spoilage and biochemical changes in meat and meat products
21. How are food materials assessed for its quality? Discuss in detail

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

August / September 2021

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. List out the applications of monoclonal antibodies.
2. Write a note on immunomodulators.
3. Give an account on use of antinuclear antibodies.
4. Comment on tumor antigens.
5. Define innate immunity with examples.
6. Write a note on B and T cell epitopes.
7. Write a note on cytokines.
8. Briefly comment on activation of B cells.

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

11. Differentiate between monoclonal antibodies and polyclonal antibodies.
12. Discuss on antibody phage display.
13. Write a note on tuberculosis.
14. Write a note on HLA tissue typing techniques.
15. Give an account on structure and functions of IgG.
16. Explain briefly on cells of immune system.
17. Discuss on type II hypersensitivity reactions.
18. Describe MHC class II.

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

19. Discuss on vaccine development and types.
20. Explain autoimmune disease with reference to rheumatoid arthritis.
21. Describe T-cell maturation and differentiation.
22. Give an account on antigen-antibody reactions.
23. Explain types of ELISA with its applications.

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PS 505.4a

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St Aloysius College (Autonomous)

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

August / September 2021

IPR AND REGULATORY AFFAIRS

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. Trade secret
2. Industrial property
3. NOAEL
4. Pharmacodynamics
5. Fair use of a copy right
6. Research integrity
7. ICH-GCP
8. RCT

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

9. Comment on various stages in drug development
10. Comment on good laboratory practices in nonclinical laboratory studies.
11. Comment on the role and responsibilities of various stake holders in clinical research.
12. Explain patent revocation in India with an example.
13. Write about various *in vitro* and *in silico* methods in preclinical studies.
14. Discuss on biopiracy.
15. Write a note on history and evolution of regulations in clinical research.
16. Describe in detail protection of plant varieties.

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

17. Write a note on significance and ICH-GCP guidelines for preparing informed consent form.
18. Explain geographical indications with three examples. Comment on the benefits of registration of geographical indications.
19. Discuss in details the importance of pharmacokinetics in drug discovery.
20. Discuss on various types of patent application.
21. What are clinical trials? Discuss the significance of various phases in clinical trials.

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