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St Aloysius College (Autonomous)
Mangaluru
Semester IV – P.G. Examination - M. Sc. Biotechnology
September - 2020

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. Maillard reactions
2. Preservation of volatiles
3. Factors affecting quality of foods
4. Smoking and pickling in preservation
5. SCP
6. Tempeh production
7. ISO 22000
8. Irradiation

II Write explanatory notes on any FIVE of the following:

(5x5=25)

9. Factors affecting growth of micro organisms in food
10. Macro nutrients in food. Explain each.
11. Principles of HACCP.
12. Production of cheese
13. Food processing using low temperature
14. Preparation of soy sauce
15. Natural preservatives
16. Microbial food poisoning

III Answer any THREE of the following:

(3x10=30)

17. Discuss in detail on beer production
18. Write a detailed note on the types of food additives.
19. Discuss on biochemical changes in foods during processing and storage.
20. Describe the food spoilage mechanism in canned foods.
21. Explain in detail about the antinutritional factors and their effects with suitable examples

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September - 2020

IMMUNOLOGY

ST. ALOYSIUS COLLEGE
PG LIBRARY
MANGALORE - 575 004
Max. Marks: 70

Time: 3 Hours

Note: Draw neat labeled diagrams/schematic sketches/structures wherever Necessary.

I Write short notes on any FIVE of the following:

(5x3=15)

1. Haptens
2. Type I hypersensitivity reaction
3. Immuno surveillance
4. Edible vaccines
5. Tumor antigens
6. Cytokine antagonists
7. Characteristics of innate immunity
8. RIA

II Write explanatory notes on any FIVE of the following:

(5x5=25)

9. ELISA
10. Graft Vs Host disease
11. Antigen processing and presentation
12. Immunoglobulin structure and functions
13. Systemic lupus erythematosus
14. T cells activation and differentiation
15. Production of monoclonal antibodies
16. Antigen antibody reaction kinetics

III Answer any THREE of the following:

(3x10=30)

17. Discuss on antibody diversity and the mechanism of DNA rearrangements
18. Discuss on concepts in vaccine development and types of vaccines with suitable examples.
19. Discuss on
 - a) Immune response to viral infections
 - b) Rheumatoid Arthritis
20. Describe the types of cytokines based on the functions with suitable examples.
21. Write a note on complement systems.

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September - 2020

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. Copy right
2. Biopiracy
3. NOEL
4. Pharmacokinetics
5. Various regulatory bodies in clinical research
6. Role and responsibilities of IRB
7. Conditions for patenting inventions
8. Research integrity

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

9. Discuss the legislature regulating IPRs in India
10. Comment on CPCSEA guidelines for animal experimentation
11. What are clinical trials? Discuss the significance of various phases in clinical trials.
12. Explain patent revocation in India with an example.
13. Write about various animal models for preclinical research.
14. Geographical indications
15. Write a note on significance and ICH-GCP guidelines for preparing informed consent form.
16. Comment on various types of clinical research.

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

17. Explain the regulatory requirements in filing a IND.
18. What are the requirements to be fulfilled for a patent grant? State the process from patent search till the grant of patent.
19. Discuss in details the good manufacturing practices in drug manufacturing.
20. Discuss the design and maintenance of case report form.
21. Describe in detail protection of plant varieties and the registration of a new plant variety.