PH 501.4 Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

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

April - 2019

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. HACCP
2. Pasteurisation
3. SCP
4. Smoking in food preservation
5. Antimicrobial constituents
6. Adulterants
7. Tempeh
8. Endotoxins

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

9. Food spoilage mechanisms.
10. Water soluble vitamins
11. Swiss cheese
12. Natural preservatives
13. Probiotics in human diet
14. Miso
15. Types of canning
16. Relative humidity of environment

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

17. Explain the process of wine production and the role of microorganisms.
18. Staphylococcal food poisoning
19. What are anti-nutritional factors, explain their effect with suitable examples.
20. Explain the types of food additives.
21. Write a detailed note on some of the microbial exopolysaccharides.

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St Aloysius College (Autonomous)
Mangaluru
Semester IV – P.G. Examination - M.Sc. Biotechnology
April - 2019
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. Differentiate between innate and adaptive immunity.
2. Structure of MHC class I molecules.
3. Anaphylaxis.
4. Chronic granulomatous disease.
5. Pathophysiology of rheumatoid arthritis.
6. Generalized immuno suppressive therapy
7. Affinity and avidity
8. DNA vaccine

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

9. Mention the cells of innate immune system and discuss their immunological functions.
10. Discuss the basic structure of immunoglobulin molecule.
11. How are endogenously synthesized antigens processed and presented by immune cells?
12. Discuss the classical pathway of complement activation.
13. Discus the immune response to HIV infections.
14. Why is immune tolerance critical to the normal functioning of the immune system?
15. Monoclonal antibodies have been administered for therapy in various autoimmune conditions. What is the rationale for these approaches.
16. Discuss phage display technology.

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

17. Explain the mechanism used by lymphocytes to produce nearly infinite assortment of antibodies and antigenic specific receptor.
18. Discuss T cell development.
19. Discuss type II hyper sensitivity.
20. Describe three likely sources of tumor antigen.
21. Explain the relationship between in cubation period of a pathogen and approach needed to achieve effective active immunization.

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PS 505.4

Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

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

April - 2019

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. Geographical indications.
2. Patent cooperation treaty
3. Drug delivery system
4. Dose Response curve
5. IEC and IRB
6. Characteristic features of Case Report Form
7. Pharmacokinetics
8. Copyright

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

9. The Biological Diversity Act 2002
10. Write short note on WIPO and its role
11. *Invitro* assays
12. Explain randomized control trial and blinding
13. Maintaining and managing Investigator's Brochure.
14. Principles of ICH –GCP
15. Trademark and trade secrets
16. CPCSEA guidelines for animal experimentation.

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

17. Types of patent applications in detail. Add a note on Patent act 1970.
18. Good clinical practices and Good Laboratory practice.
19. Protection of plant varieties and Farmers Rights Act, 2001.
20. Roles and responsibilities of sponsor and Investigator.
21. Justify the need for toxicological investigation in pre-clinical studies.

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BH 501.4

Reg. No. | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
Semester IV – P.G. Examination - M.Sc. Biotechnology
April - 2018
FOOD BIOTECHNOLOGY 2018

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 in human health.
2. Factors affecting growth of micro organisms in food.
3. ISO – 22000
4. Presence and concentration of gases around food.
5. Pasteurization
6. Production of tempeh.
7. Preservation of foods by dehydration
8. SCP

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

9. Explain intrinsic parameters with respect to moisture content
10. Elaborate on the preservation of volatiles.
11. 6 salient features of FSSAI
12. Sensory evaluation of food.
13. Microbial food poisoning
14. Types of blanching
15. Swiss cheese preparation
16. Applications of cyclodextrin and alginate in the food industry.

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

17. Discuss on antinutritional factors
18. Explain industrial production of beer.
19. Elaborate on the process of canning.
20. Give a detailed account on food additives.
21. Explain in detail the biochemical changes in foods.

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Reg. No. | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
Semester IV – P.G. Examination - M.Sc. Biotechnology
April - 2018
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. Haptens
2. Antigen equilibrium
3. Thyrotoxicosis
4. MHC class I molecules
5. What are cytokines?
6. What are tumour antigens?
7. Differentiate between monoclonal and polyclonal antibodies
8. How does the human system respond to antibodies?

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

9. Explain the structure and function of IgG.
10. Differentiate between innate and adaptive immunity.
11. Explain type I hypersensitivity reactions.
12. Explain the activation of B and T cells.
13. Explain the use of antinuclear antibodies in autoimmune diseases.
14. Explain graft vs host disease in transplantation.
15. Explain immunotoxins.
16. Explain antibody phage display.

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

17. Explain the antigen-antibody reactions.
18. Explain the exogenous pathways involved in antigen processing and presentation.
19. Discuss the immune response to tuberculosis.
20. Discuss the importance of immunoassay techniques with reference to ELISA and RIA.
21. Explain antibody diversity.

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PS 505.4

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St Aloysius College (Autonomous)
Mangaluru
Semester IV – P.G. Examination - M.Sc. Biotechnology
April - 2018
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. Biopiracy
2. Institutional review board
3. Geographical indication
4. Copy right
5. GCP
6. Case report form
7. Dose response curve
8. NOEL

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

9. Types of patent application
10. Procedure for registration of design
11. Protection of plant varieties and farmer's right act.
12. Phases of clinical trial
13. Write a note on ICH-GCP
14. Pharmacodynamics
15. GMP and GDP in drug manufacturing
16. Animal testing in preclinical research

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

17. Discuss the procedure involved in patent filing and documentation.
18. Briefly explain basic study design in clinical trial.
19. Give an account on maintaining and managing essential document to conduct a clinical trial.
20. CPCSEA guidelines for animal experimentation. Explain
21. Explain the procedure for drug development.

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