

RW-6046

481301

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

MEDICAL MICROBIOLOGY

(CBCS—2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Section - A

(10 × 2 = 20)

Answer **all** questions.

1. Normal flora.
2. Peritrichous.
3. Meningitis.
4. Albert Stain.

5. Robertson cooked meat medium.
6. Zoonosis.
7. STD.
8. TCBS.
9. Negri bodies.
10. Nosocomial infection.

Section - B

(5 × 5 = 25)

Answer **all** questions.

- 11 (a) Write short notes on normal flora of human body.

(Or)

(b) Give an account of opportunistic pathogens with suitable example.

12. (a) Give a short notes on diagnostic method for *Mycobacteria*.

(Or)

(b) Describe briefly on pathogenesis and diagnosis of Whooping cough.

13 (a) Explain principle and process of WIDAL test.

(Or)

(b) Write a brief notes on Dental caries.

14 (a) Give a short note on Staphylococcal infections.

(Or)

(b) Write a detailed note on Spirochetes.

15 (a) Describe briefly on Hepatitis B virus.

(Or)

(b) Write a detailed note on Encephalitis.

Section - C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detailed account on the followings :

(a) Contributions of Louis Pasteur.

(b) Koch postulates.

17. Explain in detail on pathogenesis, diagnosis and treatment to Diphtheria.
18. Explain in detailed account on the following :
- (a) Bacterial food poisoning.
 - (b) Dysentery.
19. Explain in detailed account on Chlamydia.
20. Write an essay on HIV.

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RW-6047

481302

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

**Elective—PRINCIPLES OF GENETIC
ENGINEERING**

(CBCS—2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. Methylases
2. Vectors.
3. Nucleases.
4. Plasmids.
5. Gene Cloning.

6. Hybridization.
7. DNA Library.
8. Gel Electrophoresis.
9. PCR.
10. DNA Plasmid.

Part - B

(5 × 5 = 25)

Answer either (a) *or* (b) in each of the following questions.

11. (a) Describe the applications of DNA ligases in genetic engineering.

(Or)

(b) Give an account on uses of restriction enzymes.

12. (a) Explain the principles and application of Lambda DNA.

(Or)

(b) Discuss about the yeast vectors.

13. (a) Describe the basic steps involved in gene cloning.

(Or)

(b) Explain various DNA delivery systems.

14. (a) Write a note on radiolabelling on nucleic acids.

(Or)

(b) Explain the dot blotting techniques.

15. (a) Describe the automatic gene sequencing method.

(Or)

(b) Describe the methods of genomic isolation, DNA.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on DNA modifying enzyme.

17. Describe the various expression vectors and their significance
18. Discuss about screening and analysis of recombinant DNA.
19. Explain the various methods in genetic engineering and their applications.
20. Write an essay on principles and application of different PCR technique

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RW-6048

481303

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

SEAFOOD MICROBIOLOGY

(CBCS—2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. Food preservation.
2. Icing.
3. Canning.
4. Smoking.
5. Aflotoxins.

6. Ciguatera.
7. Seafood borne viruses.
8. Bank for International Settlements.
9. ISO.
10. IPQC.

Part - B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Enumerate and explain the criteria for assessing freshness of seafood.

(Or)

(b) Comment on onboard handling of fresh seafoods.

12. (a) Explain the process of freezing of seafoods.

(Or)

(b) Enumerate the role of preservatives in processing of food.

13. (a) Enumerate the factors affecting spoilage of seafoods.

(Or)

(b) Write an account on histamine producers.

14. (a) Give an account of seafood borne human pathogenic bacteria.

(Or)

(b) Comment on pathogenic fungi which inhabiting seafoods.

15. (a) Write about HACCP concept.

(Or)

(b) What is meant by quality control ? Explain.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss the importance of preservation and processing of seafoods.
17. Describe the conventional method of preservation of seafoods and add a note on its merits and demerits.
18. Write a detailed account on microbial spoilage of fresh and preserved seafoods.
19. Discuss the defects in Fish processing technology.
20. Discuss the national standards on microbial qualities of seafoods.

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RW-6049

481503

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

MARINE MICROBIAL PHARMACOLOGY

(CBCS—2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. *Ulva Lactuca*.
2. Mangroves.
3. Percolation.
4. Cyanovirin.
5. Hightthroughput screening.

6. Docking.
7. Therapeutic Index.
8. Nebulization.
9. TRIPS.
10. Trademark.

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Comment on biomedical importance of marine invertebrates.

(Or)

(b) Write a brief account on collection, identification and preservation of seaweeds for pharmaceutical purpose.

12. (a) Give an account on Cyanobacteria and its biological significance.

(Or)

(b) Write short notes on :

(i) Antitumor compounds.

(ii) Cytotoxic compounds.

13. (a) What is Receptors ? Write down the importance of receptors in drug design.

(Or)

(b) Write the methods of isolation, cultivation and extraction of secondary metabolites from marine microorganisms.

14. (a) What are the basic methodologies to be adopted for formulating a drug ?

(Or)

(b) Briefly describe the process of absorption and distribution of drugs.

15. (a) Write a note on patent policy and public health in developing countries.

(Or)

- (b) Write short notes on FDA and its regulations.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Give a detailed account on natural products from marine bioresources and their significance.
17. Write an essay on Standardization of marine drugs based on WHO guidelines.
18. With a neat diagram, describe the sequential steps followed in bioinformatics to design a drug.

19. Discuss various advanced methods employed in pharmacological evaluation.
20. Explain the importance of IPR and its application in Drug Discovery.

RW-6050

481702

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

I/D : BIOPROCESS TECHNOLOGY

(CBCS—2009 onwards)

Time: 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

1. Mass Transfer Coefficients.
2. Immobilization.
3. Monad Model.
4. Fed-batch culture.
5. CSTR.

6. Growth Yield.
7. Enzyme specificity.
8. Oxygen transfer coefficient.
9. Distinguish between Bioprocess and Chemical process.
10. Methods of Sterilization.

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain the media formulation techniques.

(Or)

(b) Explain enzyme-substrate reaction.

12. (a) What are the advantages of Bio-process over Chemical process ?

(Or)

(b) Write a short note on batch and continuous sterilization.

13. (a) Explain the basic principles of electrophoresis.

(Or)

(b) How do you determine volumetric oxygen transfer coefficient (kLa) ? Explain any one of the methods.

14. (a) Explain the sterilization process of liquids in fermentors.

(Or)

(b) Write note on multiphase reactors.

15. (a) Explain anaerobic digestion.

(Or)

(b) Give an account on anaerobic fermentors and their uses.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Write notes on Bioprocessors and its advantages than Conventional process.

17. Describe and compare the merits and demerits of batch culture and continuous culture of microorganisms.

18. How agitation affect the mixing and mass transfer in fermentor ?

19. Describe the following :
 - (a) Bubble column reactor.

 - (b) Fluidized bed reactor.

20. Elaborate the principles of ultra - filtration and reverse osmosis and their applications in Downstream processing technology.

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RW-6051

481202

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

MICROBIAL GENETICS

(CBCS—2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** questions.

Each question should be in a sentence.

1. Frame shift mutation.
2. DNA repair.
3. Episomes.
4. Conjugative plasmids.
5. Conjugation.

6. Hfr strains.
7. Genetic recombination.
8. Generalized transduction.
9. Gene conversion.
10. Petite mutants.

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Describe the different types on DNA damage.

(Or)

(b) Give a note on detection and isolation of mutants.

12. (a) Write short notes on transposable elements.

(Or)

(b) Describe the Lambda phage.

13. (a) Describe competence in bacterial transformation.

(Or)

(b) Chromosome mapping—Discuss.

14. (a) Describe the use of transduction in genetic mapping of phage T₄.

(Or)

(b) Write short notes on *Cis-trans* Complementation analysis.

15. (a) Describe the mutants of neurospora.

(Or)

(b) Give an account on gene mapping.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on molecular basis of mutation.

17. Explain the plasmid replication by Theta mechanism.

18. Write an essay on Hfr transfer during conjugation.

19. Describe the specialized transduction with suitable diagrams.

20. Write an essay on neurospora genetics.

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RW-6052

481203

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

IMMUNOTECHNOLOGY

(CBCS–2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer **all** the questions.

1. Thymectomy.
2. Dendritic cells.
3. Adjuvants.
4. Idiotypic determinants.
5. Anaphylotoxin.

6. Histamine.
7. Haemagglutinin.
8. Sporozoites.
9. TNF.
10. MHC.

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) With a neat diagram explain the steps involved in Humoral immune response.

(Or)

- (b) Give a brief account on programmed cell death.

12. (a) Write a brief note on ELISA and its applications.

(Or)

(b) Write short notes on Monoclonal antibodies with its applications.

13. (a) Describe the principle and application of complement fixation test.

(Or)

(b) Comment on immunodeficiency disease and its impact in human beings.

14. (a) Explain the steps involved in development of recombinant vaccines.

(Or)

- (b) Discuss the immunological responses of host to viral infection.

15. (a) Write short notes on oncogenes and its functions.

(Or)

- (b) Give a brief account on Tumor antigens and its immunological response.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Give a detailed account on structure of thymus gland with respect to T-cell development and maturation.

17. Explain the types of immunoblotting techniques and their applications.

18. Give a detailed account on IgE mediated hypersensitivity reaction.

19. Illustrate the diagrammatic representation of Plasmodium infection and add a note on how response to Plasmodium infection.

20. Write an essay on Transplantation immunology.

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RW-6053

481502

M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

Marine Microbial Technology

Elective—MARINE BIOTECHNOLOGY

(CBCS—2009 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part - A

(10 × 2 = 20)

Answer all questions.

1. Biofilm.
2. Marine Borers.
3. Micropropagation.
4. Pollination.

5. Hyperproliferative state.
6. Autocrine cell.
7. PCR.
8. Microarray.
9. Induced breeding.
10. Cryopreservation.

Part - B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) List out the marine borers and foulers.

Or

(b) Describe the methods of extraction of antifouling compounds from octocorals.

12. (a) Give an account on genetically engineered herbicidal and insect resistant strain.

Or

(b) Write a note on in-vitro culture technique for aquatic plants.

13. (a) Explain the techniques involving in transgenic fish production.

Or

- (b) Give an account on methods of Adherent cell culture.

14. (a) Give an account on advantages and disadvantages of DNA microarray.

Or

- (b) Write a note on isolation and sequence analysis of individual protein.

15. (a) Explain about cryopreservation of fish embryo.

Or

(b) Give an account on diagnosis of white spot syndrome virus disease in tiger shrimp.

Part - C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on antibiotic and antifouling properties of marine invertebrates.

17. Describe about *Agrobacterium*-mediated gene transfer mechanism and vectors in plants.

18. Write an essay on in-vitro fertilization techniques for animals.

19. Describe the conventional sequencing methods.

20. Write an essay on prebiotics and probiotics culture technology for animal feed.

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