

R8330

Sub. Code

3164T4/941T

B.A./M.Sc. DEGREE EXAMINATION, APRIL – 2023

Fourth Semester

Gender Studies / Integrated Marine Biology

பொதுத்தமிழ் தாள்-4 : பண்டைய இலக்கியமும் நாடகமும்

(Common for B.A. Gender Studies/M.Sc. Integrated  
Marine Biology)

(CBCS – 2019 onwards)

Time : 3 Hours

Maximum : 75 Marks

பகுதி அ

(10 × 2 = 20)

அனைத்து வினாக்களுக்கும் ஓரிரு சொல்/தொடரில் விடை தருக.

1. ஆற்றுப்படை-குறிப்பு தருக.
2. ஏறுதழுவுதல் இடம் பெறும் நூல் எது? திணை எது?
3. அறிஞர் அண்ணாவின் நாடகங்களில் இரண்டினைச் சுட்டுக.
4. அகத்திணை-குறிப்பு வரைக.
5. நிலத்தின் வகைகளைக் கூறுக.
6. எட்டுத்தொகை நூல்களை எழுதுக.
7. திருக்குறளின் வேறு பெயர்களை எழுதுக.
8. 'தோற்றத்தால் பொல்லார்;துணை இலார்' எனும் பழமொழி நானூற்றுப் பாடலின் கருத்து யாது?
9. நாடகத்தின் வகைகளைக் கூறுக.
10. ஓரங்க நாடகம்-குறிப்பு வரைக.

பகுதி ஆ

(5 × 5 = 25)

அனைத்து வினாக்களுக்கும் ஒரு பக்க அளவில் விடை தருக.

11. (அ) சிறுபாணாற்றுப்படையின் சிறப்புகளைக் கூறுக.  
(அல்லது)  
(ஆ) யாயும் ஞாயும்-குறுந்தொகைப் பாடலின் கருத்தினைச் சுட்டுக.
12. (அ) நாலடியாரின் கல்வி, அறச் சிந்தனைகளைக் கூறுக.  
(அல்லது)  
(ஆ) பழமொழி நானூறு பாடல்கள் வழி அறக்கருத்துக்களை விளக்குக.
13. (அ) நீதி தேவன் மயக்கம் நாடகத்தின் கதைச்சுருக்கம் தருக.  
(அல்லது)  
(ஆ) உள்ளூறை, இறைச்சி-விளக்குக.
14. (அ) சங்க இலக்கியம்-குறிப்பு வரைக.  
(அல்லது)  
(ஆ) நீதி இலக்கியம்-குறிப்பு வரைக.
15. (அ) வானொலி நாடகம் பற்றி எழுதுக.  
(அல்லது)  
(ஆ) ஓரங்க நாடகத்தின் இயல்பினைச் சுட்டுக.

பகுதி இ

(3 × 10 = 30)

பின்வருள் வினாக்களில் எவையேனும் மூன்றுக்கு விரிவாக விடையளி.

16. வெள்ளிவீதியார் பாடல்களில் தனித்தன்மைகளை விவரி.
17. திருக்குறளின் வாழ்வியல் கருத்துக்களை விவரி.

18. நீதி தேவன் மயக்கம் நாடகத்தின் மூலம் அறிஞர் அண்ணா முன்வைக்கும் கருத்துகள் யாவை?
  19. புறத்திணைகளைக் கூறி, அவற்றின் தனித் தன்மைகளை விவரி.
  20. ஓரங்க நாடகம் ஒன்றினைப் படைத்துக் காட்டுக.
-

**R8331**

**Sub. Code**

**3164E1/942E**

**M.Sc./B.A. DEGREE EXAMINATION, APRIL – 2023**

**Fourth Semester**

**Gender Studies/Integrated Marine Biology**

**ENGLISH – IV/ENGLISH FOR ENRICHMENT - IV**

**(Common for B.A. Gender Studies/M.Sc. Integrated  
Marine Biology)**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Mention the full name of Eliza in *Pygmalion*.
2. Who has the most power in *Pygmalion*?
3. State the main theme of R.K. Narayan's *Swami and Friends*?
4. Why did Swami change his tactics?
5. Name the villain in *The Winter's Tale*.
6. Who was Shylock and how did he become rich in *The Merchant of Venice*?
7. Read the sentences and find out what kind of sentences they are.
  - (a) Do you know where my iPod is?
  - (b) The house is on fire!

8. Supply the appropriate tag questions:  
(a) We are late for the movies \_\_\_\_\_?  
(b) You have done your homework \_\_\_\_\_?
9. Define Group Discussion.
10. Change the sentence into Indirect speech: He said, "I live in the city center."

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a short note on the theme of transformation portrayed by Eliza's appearance in *Pygmalion*?

Or

- (b) Examine that *Pygmalion* is a comedy of manners.

12. (a) Write about Sankar's qualities as a student in R.K. Narayan's *Swami and Friends*?

Or

- (b) Bring out a brief note about the four persons who were Swami's friends.

13. (a) Why does Shylock demand Antonio's flesh instead of money?

Or

- (b) Explore the idea of 'otherness' in *Romeo and Juliet*.

14. (a) Place the suitable verbs in brackets with the correct tense:

(i) He asked me whether either of the applicants \_\_\_\_\_ suitable. (was/were)

(ii) Each of these minerals \_\_\_\_\_ found in India. (is/are)

- (iii) Many a man \_\_\_\_\_ died at sea.  
(has/have)
- (iv) Either you or he \_\_\_\_\_ mistaken.  
(is/are)
- (v) Neither food nor water \_\_\_\_\_ given  
to the captives. (was/were)

Or

(b) Complete the sentences using the correct question tags.

- (i) You are addicted to shopping, \_\_\_\_\_?
- (ii) They were not part of the regular team,  
\_\_\_\_\_?
- (iii) She has her hair styled every week, \_\_\_\_\_?
- (iv) I should not criticize the teacher, \_\_\_\_\_?
- (v) Peter and Jenny want to be alone, \_\_\_\_\_?

15. (a) Choose the correct responses for the given statement.

- (i) I'm sorry I'm late.
- (1) Good for you!
- (2) Here you are
- (3) No Problem
- (ii) I'm sorry — I dropped your book in the bath.
- (1) Oh, come on, Please
- (2) It's all my fault!
- (3) These things happen

(iii) I'm sorry I didn't remember to bring your DVD.

(1) Never mind (2) Here you are (3) well done.

(iv) I'm sorry I knocked your tortoise off the table.

(1) That's amazing

(2) What's wrong

(3) How could you be so careless!

(v) I'm sorry I burned the dinner.

(1) I don't get it!

(2) These things happen

(3) How much is this?

Or

(b) List out the skills required for Group Discussion.

**Part C**

(3 × 10 = 30)

Answer any **three** of the following questions.

16. Discuss the relationship between Higgins and his mother in *Pygmalion*.
17. How would you describe the tone and attitude of the narrator toward Swami and the other Characters in R.K. Narayan's *Swami and Friends*?
18. Identify the major conflict in *The Winter's Tale* and how is it resolved?
19. Write an essay on Reported Speech with examples.
20. Expand the following proverb: 'A Friend in Need is a Friend Indeed'.

**R8434**

**Sub. Code**

**92BPEL**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Second Semester**

**Integrated Marine Biology**

**PROFESSIONAL ENGLISH FOR LIFE SCIENCES – II**

**(CBCS – 2020 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define listening.
2. What do you remember “whilespeaking”?
3. Write the art of persuasion.
4. Write Do and don'ts in debate.
5. How to become a vlogger?
6. Define Dynamic web page.
7. What is creativity?
8. Define Brainstorming.
9. What is slide show in presentation?
10. How to use capitalize the first word of a full sentence in a quotation?



**Part B**

(5 × 5 = 25)

Answer any **five** questions.

11. Read the given passage and answer the following question:

The smile is the best tonic for our mind and body. It takes thirteen muscles to smile, but forty-three to be angry. So, it is easier to smile and difficult to be angry. To be cheerful, we have to create positive thoughts. On the other hand, if we constantly think about negative things, we feel unhappy. So, the best way to avoid a negative idea is to replace it with a positive one. When we are relaxed in bed, we should practise putting some cheerful thoughts.

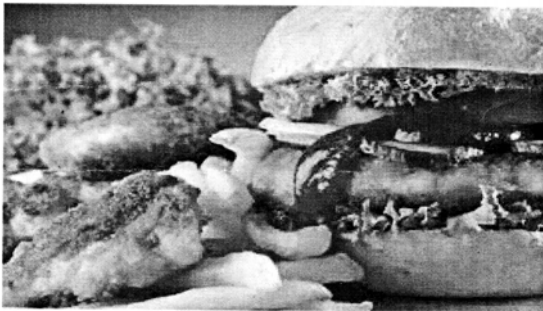
- (a) What is the best tonic for our mind and body?
  - (b) What should we do to be cheerful?
  - (c) What is the best way to replace a negative idea?
  - (d) What should we practise when we are relaxed in bed?
  - (e) What happens when we constantly think about negative things?
12. Write a note on Persuasive communication.
13. How to share our video on social media.
14. What are the basic instruction designs for oral presentation through short film?
15. Write a note on font, slide and design ideas.
16. Write a short note on the steps to create blog page.
17. Write briefly on the usages and omission of capitalization.
18. Write shortly on the advantages of “Just – A Minute Activities”.

**Part C**

(3 × 10 = 30)

Answer any **three** of the following questions.

19. Write a summary on “Discipline is more important than Education”.
20. Write a debate on high school students should not be allowed cell phones in school.
21. Look the following picture carefully. Prepare an advertisement and write your inference along with the appropriate slogan.



22. Imagine you are the principal of the college. Draft a circular that must be sent to the faculty and students regarding Sports Day in your college.
23. Make a flyer for science exhibition to be conducted in your college.

**R8437**

**Sub. Code**

**548401**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Fourth Semester**

**Integrated Marine Biology**

**CELL AND MOLECULAR BIOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Write short note on magnification.
2. Define Golgi complex.
3. Define three main functions of Ribosome
4. Define staining Techniques.
5. Define cell.
6. List out the tumour suppressor genes.
7. Define conjugation.
8. Bacteriophage
9. Central dogma
10. What is an operan?

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write note on difference between prokaryotic and eukaryotic cell.

Or

- (b) Describe about function of endoplasmic reticulum and Golgi complex.

12. (a) Write note on difference between the active and passive transport.

Or

- (b) Give the reason why lysosome is called suicidal bag of cell.

13. (a) Describe the different phases of meiotic prophase-I. Mention the chromosomal events during each stage.

Or

- (b) State differences between the events of meiosis and mitosis.

14. (a) What is the difference between DNA and RNA?

Or

- (b) Write about Watson and crick model of DNA.

15. (a) What is the salient feature of central dogma?

Or

- (b) Describe about operon.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write detailed note on types of microscopes with neat sketch.
  17. Give ultrastructure and function of Ribosomes, Nucleus, Lysosome and Nucleolus
  18. Write an essay on types of cancer and its treatment methods.
  19. Write detailed note on three methods of genetic recombination?
  20. Explain in detail about concept of Gene Regulation and its types.
-

**R8438**

**Sub. Code**

**548402**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Fourth Semester**

**Integrated Marine Biology**

**DEVELOPMENTAL BIOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is capacitation?
2. Write a short note on fertilization and its type's.
3. Define Placentation.
4. What are the subdivisions of primary embryonic brain?
5. Define primary organizer.
6. What is regeneration?
7. Write short note on thyroxin hormone.
8. Define metamorphosis with example
9. Write short note on unique feature of planaria.
10. What is hammerling experiment?

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write detailed note on Oogenesis.

Or

- (b) What are the types of internal fertilization? Give example.

12. (a) Sketch frog eye and write a note on it.

Or

- (b) Write note on development of brain in frog.

13. (a) Describe the organizer concept.

Or

- (b) Describe metamorphosis in frog.

14. (a) Write note on biochemical changes associated with metamorphosis.

Or

- (b) Describe hormonal control of amphibian metamorphosis with example.

15. (a) What are the factors affect regeneration?

Or

- (b) Write note on types of regeneration.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on process of gametogenesis.
17. Write detailed note on types of placentation and its types,

18. Write detailed note on structure, physiology, types and function of placenta mammals.
  19. Write an essay on nuclear transplantation in acetabularia.
  20. Explain in detail about biology and regeneration of planaria.
-



**R8439**

**Sub. Code**

**9MB4A1**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Fourth Semester**

**Integrated Marine Biology**

**Allied IV – TAXONOMY OF ANGIOSPERMS,  
ECONOMIC BOTANY AND EMBRYOLOGY OF  
ANGIOSPERMS**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. What kind of poison is used in herbarium preparation?
2. Define Gamopetalae.
3. What is Apocarpous ovule?
4. What is a glume?
5. What are the major varieties of Paddy grown in south India?
6. Write the Binomial name of Ragi and Pomogranate.
7. Describe Circinotropous ovule.
8. Define the layers of pollen.
9. What is syngamy?
10. Define helobial endosperm with an example.

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Give a short account on herbarium technique.

Or

- (b) Enumerate the characteristic features of the class monocotyledonae.

12. (a) Write the characteristic features of the family Rutaceae.

Or

- (b) Explain the inflorescence and floral formula of Euphorbiaceae.

13. (a) Discuss the constituents and economic importance of Olive oil.

Or

- (b) Briefly describe about the cultivation of Coffee.

14. (a) Describe different types of ovule with diagram.

Or

- (b) Narrate the steps involved in the formation of male gametophyte.

15. (a) Explain different types of endosperm with suitable example.

Or

- (b) Describe the process of double fertilization and triple fusion.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the Bentham and Hooker's classification of Angiosperms.
17. Give a detailed account on the family Rutaceae.
18. Explain the cultivation method of Ragi.
19. Discuss the structure and development of *Polygonum* type of embryo sac.
20. Describe the structure and development of dicot embryo.

---

**R8440**

**Sub. Code**

**548601**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Sixth Semester**

**Integrated Marine Biology**

**ANIMAL PHYSIOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Explain balanced diet.
2. What is Steapsin?
3. Note on book-gills.
4. Define Hamburger's phenomenon.
5. Write about podocytes.
6. Define osmoconformers with suitable example.
7. Explain axon hillock.
8. Define sarcomere.
9. What is 3F gland?
10. Define sex reversal.

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the structural characteristics of small intestine.

Or

- (b) Explain the role of vitamins in nutrition.

12. (a) Give an account on mechanism of breathing.

Or

- (b) List out the various clotting factors and add a note on mechanism of coagulation.

13. (a) Write an essay on ornithine cycle and its significance.

Or

- (b) Define osmoregulation. How does osmoregulation takes place in migratory fishes.

14. (a) Draw a neat labelled diagram of a neuron and add a note on transmission of nerve impulse.

Or

- (b) Describe a neuro muscular synapse with diagram.

15. (a) What are ductless glands? Describe the role of hormones in reproduction.

Or

- (b) Write an essay on monosex seed production.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe the process of digestion, absorption and assimilation of carbohydrates.
  17. Write a detailed account on transport of oxygen and carbon dioxide in blood.
  18. Explain the physiology of urine formation in man.
  19. Give a detailed account on neuromuscular junction of fish.
  20. Discuss the structure and functions of endocrine glands of fishes.
-

**R8441**

**Sub. Code**

**548602**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Sixth Semester**

**Integrated Marine Biology**

**FISH AND FISHERIES**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define fish.
2. Note on Elasmobranchii.
3. Explain hydrostatic organ.
4. What is realized fertility?
5. Define unit stock.
6. Note on Atkins tag.
7. Define rancidity.
8. Note on aflotoxins.
9. Role of IUCN.
10. MPEDA.

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the characteristics of chondrichthyes.

Or

- (b) Write an account on morphometric and meristic characters of fishes.

12. (a) Give an account on food and feeding habits of fishes.

Or

- (b) Describe the various types of migration of fishes with suitable examples.

13. (a) Comment on stock-recruit relationship of fishery resources.

Or

- (b) Write an account on survey of fish eggs and larvae.

14. (a) Describe the microbial spoilage of seafood.

Or

- (b) Give a brief account on seafood borne human pathogens.

15. (a) Write an essay on principles of conservation and management of fishery resources.

Or

- (b) List out the various organization involved in fisheries conservation.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Give an outline classification of fishes with suitable example.

17. Write an essay on length-weight relationship in fishes.



18. Give a detailed account on acoustic and aerial methods of surveying the fishery resources.
  19. Discuss in detail on spoilage of fish.
  20. Write an account on conservation and management of fishery resources.
-

**R8442**

**Sub. Code**

**548E03**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Sixth Semester**

**Integrated Marine Biology**

**MARINE RESOURCES**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Coastal Aquifers?
2. Utility of Grabs and Corers.
3. Continental slope.
4. Manganese crust and its utilities.
5. Describe *Cnidocytes* with examples.
6. Define non-renewable marine resources with suitable examples.
7. What is black sea? What is it famous for?
8. Upwelling
9. Marine bioactive compounds and their utility.
10. Comment on Manganese Nodules.

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What are non-living marine resources? Highlight about their forms, grade and potentiality.

Or

- (b) What do you understand by marine sediments?

12. (a) Elaborate on drugs obtained from marine carbohydrates and its derivatives.

Or

- (b) Describe marine bioactive compounds, their sources and functions.

13. (a) Highlight the importance of sterols in marine invertebrates.

Or

- (b) What are the toxins that can be obtained from the sea? Explain sorting examples.

14. (a) What are the principle methods of marine exploitation as per the Food and Agricultural Organization (FAO), UN?

Or

- (b) What can be deciphered from the word 'Fisheries Management'? How is it different from manageable exploitation?

15. (a) Elaborate on the sardines fisheries in Indian waters.

Or

- (b) Elaborate on the prawns fisheries in Indian waters.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. What are carotenoids? Enlist some carotenoids from marine organisms with their biological function and commercial application.
  17. Discuss about the molluscan fishery resources of India, mentioning the commercially important species and their marketing.
  18. Write an essay on the Mineral resources in India.
  19. Briefly discuss about marine sediments and their types. Provide detailed schematic representation.
  20. Describe toxins from various marine resources and add a note on their significance.
-

**R8443**

**Sub. Code**

**548801**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Eighth Semester**

**Integrated Marine Biology**

**EVOLUTION**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Urey-Miller Hypotheses
2. Miocene epoch
3. Neo-lamarckism
4. Gene pool
5. What are Fossils?
6. Pleistocene
7. Darwinism
8. Hardy-Weinberg Principle
9. Molecular clock
10. Define speciation.

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

All questions carry equal marks.

11. (a) Describe briefly on the cosmozoic theory of origin.

Or

- (b) Write notes on the Greek Philosopher's concept of origin of life.

12. (a) Comment on Ordovician period.

Or

- (b) Briefly describe the Permian period.

13. (a) Compare and contrast Darwinism and Neo-darwinism.

Or

- (b) Write notes on the Lamarckism and Neo-lamarckism.

14. (a) Discuss briefly about species concept and speciation.

Or

- (b) Describe the Evolution of Man.

15. (a) Discuss in brief the causes of extinction.

Or

- (b) Discuss in brief the differences between cladistics and phenetics.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Give detailed description of the Cenozoic era emphasizing on the geological period, divisions (epochs) and climate.
17. Give a detailed explanation of the big bang theory with necessary features of the model, its implication and possible misconceptions associated to it.
18. Write an essay on the fossils, its type and fossilization process.
19. What are the five principles of Hardy-Weinberg equilibrium? Add a note on the factors affecting HW equilibrium principles.
20. Discuss in detail about the process of molecular evolution and add a note on the molecular systematic.

---

**R8444**

**Sub. Code**

**548802**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Eighth Semester**

**Integrated Marine Biology**

**BIOTECHNOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

All questions carry equal marks

1. Write a short note on DNA ligase.
2. What is the role of gene gun?
3. Define Metagenomics.
4. What is the uniqueness of marine microorganism?
5. Define bioreactor.
6. What is immobilization?
7. Give a brief introduction about Down Stream processing.
8. Define coagulation?
9. Write short note on protease enzymes.
10. Name the flavourants from marine source?



**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Write a note on PCR primer design.

Or

- (b) Describe about PCR techniques.

12. (a) Techniques for identification of Microorganisms.

Or

- (b) Write a detailed note on marine metagenomics.

13. (a) Describe mode of operation of batch bioreactor.

Or

- (b) Explain types of Bioreactors.

14. (a) Describe about downstream processing.

Or

- (b) Write a detailed note on separation of insoluble products.

15. (a) Explain about Marine Lipids.

Or

- (b) Explain about Marine flavourants and its application.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay one gene cloning.  
17. Give a detailed account on genomics.

18. Write detailed note on bioreactor instrumentation and process control.
  19. Give strategies to recover product in downstream processing.
  20. Write an essay on marine natural products and their derivatives.
-

**R8445**

**Sub. Code**

**548803**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Eighth Semester**

**Integrated Marine Biology**

**POST – HARVEST TECHNOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Write short note on Slush ice?
2. Define latent heat of fusion.
3. Note on pH changes in fish.
4. What is steaming of crab?
5. Define freezing.
6. What is antioxidant?
7. Note on packaging materials.
8. What is laminates?
9. What is QC?
10. Write short note on USFDA.

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a note on different types of ice.

Or

- (b) How to handle fresh fish in on board?

12. (a) Describe about sensory changes in fish.

Or

- (b) Write a note on bacterial load.

13. (a) Give an account on processing of cephalopods.

Or

- (b) How can we increase the shelf life of processed fish?

14. (a) Write a note on chemical treatment in fish processing.

Or

- (b) Write a note on packaging standard for trade.

15. (a) Explain about EU regulation for export of processed fish.

Or

- (b) Write a note on CAC.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write detailed note on RSW system.  
17. Write a detailed note on pre treatment of fish.

18. Describe about quality control of processed fish and fishery product.
  19. Give a detailed note on packing materials.
  20. Write an essay on quality control in fish processing industry.
-

**R8446**

**Sub. Code**

**548E05**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Eighth Semester**

**Integrated Marine biology**

**COASTAL DISASTER MANAGEMENT**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Define - 'Hazards'.
2. Differentiate hazards and disaster.
3. Name any four coastal disaster.
4. Why seawater intrusion happens in coastal cities?
5. What do you mean by scale of disaster?
6. What are the types of vulnerability?
7. How can coastal wetlands help to reduce forces/impact of coastal disaster?
8. Name any four causes of natural disaster.
9. Differentiate climatology and meteorology.
10. What are the different seismic waves?

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Short notes on creeping hazards and their damage.

Or

- (b) How can human response to hazards after any hazards happens?

12. (a) What are the major hazards to threats to coastal ecosystem. Any one write short notes.

Or

- (b) What are the major issues for sea water intrusion?

13. (a) Role play of mitigation measures to reduce the risk give your points.

Or

- (b) Now a days disasters happening frequently why? write the reason.

14. (a) What are the sectors responsible for reduction of disaster impact?

Or

- (b) Write short notes on causal factor of disaster.

15. (a) The government responsible to mitigation measures in India – Criticize.

Or

- (b) Describe disaster management and what are the coastal disaster management activities carried by Indian government.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe Hazards of natural process.
  17. How can affect cyclones in different coastal regions explain?
  18. In what way vulnerability assessment used for disaster management.
  19. Relate climate change and disaster and explain human inducing factors for disaster.
  20. Describe the problem of financing and insurance for coastal resource industries.
-