

**R8342**

**Sub. Code**

**461201**

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

**Second Semester**

**Oceanography and CAS**

**MARINE ECOLOGY AND ZOOGEOGRAPHY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. Light intensity measured by
  - (a) Thermometer
  - (b) Sacchi disk
  - (c) Barometer
  - (d) Salinometer
  
2. The following one is example for deep sea adoption
  - (a) light absorption
  - (b) large eyes
  - (c) save food
  - (d) small fails
  
3. Select correct match
  - (a) Food chain – Food web
  - (b) Food chain – pyramid
  - (c) Food chain – energy concervation
  - (d) Food chain – hierarchy of food (Energy) transfer

4. \_\_\_\_\_ is the changes in the characteristics of a species.
- (a) Ecology                      (b) Biology  
(c) Evolution                    (d) Ecosystem
5. Population ecology is related to \_\_\_\_\_ pattern of plant and animals.
- (a) Distribution                (b) Boundary  
(c) Local                        (d) Global
6. The abundance of species in an area is called
- (a) Genus richness            (b) Species richness  
(c) Family                      (d) Ecosystem
7. Give example for fouling organism
- (a) Fish                         (b) Penguin  
(c) Mussels                    (d) Prawn
8. Coral reefs are example for
- (a) symbiosis                 (b) parasitism  
(c) phoresis                  (d) epizoism
9. Non-native species otherwise called
- (a) parasitism                (b) epizoism  
(c) alien species              (d) symbiosis
10. Select correct match
- (a) Mussels – Algae  
(b) Phytoplankton – deep organism  
(c) Zooplankton – Green algae  
(d) Variety of organism – Biodiversity

**Part B**

(5 × 5 = 25)

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

11. (a) List Ecological factors which affect marine environment.

Or

- (b) Based on light how can you classify marine environment.

12. (a) Compare food chain and food web and draw ecological pyramid.

Or

- (b) Demonstrate Ecological structure.

13. (a) Outline about population ecology.

Or

- (b) Related prey and predator and explain.

14. (a) Summarize ecological niche and ecological succession.

Or

- (b) Describe about zoogeography with Indian ocean.

15. (a) Explain about over-exploitation of marine resources.

Or

- (b) Name marine bioresources and short notes on any one resources.

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Differentiate pelagic and deep-sea environment and explain about classification of marine environment.
  17. Explain about ecosystem structure and function.
  18. How can you use ecological modelling explain about parameters of ecological modeling.
  19. How can you define animal association in marine environment and write about endoecism.
  20. Brief about marine pollution and marine litters .
  21. Explain about marine biodiversity at Indian contest.
  22. Describe about biodiversity assessment techniques.
  23. Based over exploitation, how can threats to marine biodiversity.
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**R8343**

**Sub. Code**

**461202**

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

**Second Semester**

**Oceanography and CAS**

**MARINE POLLUTION, ENVIRONMENT AND HEALTH**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. Nutrient pollutant in the main source of \_\_\_\_\_.
  - (a) Cloth Industries
  - (b) Agricultural waste
  - (c) Radioactive element source
  - (d) Plastic industries
  
2. The following one is not toxin in marine environment
  - (a) PCB
  - (b) DDT
  - (c) TBT
  - (d) CO<sub>2</sub>
  
3. Select correct match
  - (a) Carbon monoxide – Secondary pollutant
  - (b) Removal of organic substance – Tertiary treatment
  - (c) Aeration tank – Secondary treatment
  - (d) Kills bacteria – Primary treatment

4. The following pollution in mainly affect the reproduction system of marine organism
- (a) Thermal pollution
  - (b) Soil degradation
  - (c) Plastic pollution
  - (d) Microplastics
5. Oil pollution reduce the penetration of \_\_\_\_\_ in water column in ocean.
- (a) Temperature      (b) Light
  - (c) CO<sub>2</sub>              (d) CH<sub>4</sub>
6. The following one in not a pesticide
- (a) Funicide              (b) Insecticide
  - (c) Herbicide            (d) Collicide
7. Minamata disease affect the \_\_\_\_\_ system.
- (a) Digestive system
  - (b) Reproductive
  - (c) Circulatory
  - (d) Nervous
8. Which of the following in not radioactive materials?
- (a) Cesium              (b) Plutonium
  - (c) Raelium            (d) Calcium
9. Red tide otherwise called
- (a) Algal bloom        (b) Pesticide
  - (c) Vermicide        (d) Fungicide

10. Sea level rise caused by
- (a) exploitation of coastal water
  - (b) glaciers melting
  - (c) coral bleaching
  - (d) acid rain

**Part B**

(5 × 5 = 25)

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

11. (a) What are the types of marine pollutant explain?

Or

- (b) Differentiate bioaccumulation and biomagnification.

12. (a) Name different sources of marine pollutant enter into ocean and while their impact.

Or

- (b) How can thermal pollution affect marine environment?

13. (a) What are the major oil accident happence in India along east and west coast and write their impacts?

Or

- (b) Write short notes on impacts of pesticides in marine environment.

14. (a) Short notes on heavy metal pollution towards Minamata and itai-itai.

Or

- (b) What you mean by eutrophication, how it cause and its impacts?

15. (a) Name some indicator organisms for monitoring of trace metal pollution.

Or

- (b) What are the species responsible for red tide effect and how to control or reduce the effects of red tide?

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Describe the consequences of marine pollution impacts towards marine organism.
17. How can change the physical, chemical and biological characteristics of water due to marine pollutant and explain the impact in marine organisms?
18. Criticize agricultural work causes marine pollution.
19. Define sewage pollution and explain about their treatment process.
20. Pesticide pollution – state in marine environment explain.
21. Articulate the present status of coastal pollution in India and future strategies.
22. What are the criteria for selection of indicator organism, explain about them?
23. Write brief notes on climate change impacts on marine environment.



**R8344**

**Sub. Code**

**461203**

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

**Second Semester**

**Oceanography and Coastal Area Studies**

**APPLICATION OF REMOTE SENSING AND GIS IN  
OCEANOGRAPHY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. The ratio of the total solar radiant energy returned by a planetary body to the total radiant energy incident on the body is called:
  - (a) Reflectance
  - (b) Reflectance factor
  - (c) Albedo
  - (d) None of these
  
2. Which of the following statements is correct?
  - (a) Radiant energy expressed in Joules, is the energy associated with electromagnetic radiation
  - (b) The rate of transfer of radiant energy is called flux and is expressed in watts
  - (c) The radiant energy which falls upon a surface is termed as irradiance
  - (d) All of these

3. Energy flux may affect \_\_\_\_\_
- (a) Lens
  - (b) Strength of the signal
  - (c) Aperture
  - (d) Declination
4. IRS P3 satellite uses which of the following sensors?
- (a) PAN                      (b) LISS-III
  - (c) MOS                      (d) LISS-II
5. While mapping land use and land cover, which scale is recommended?
- (a) 1:25000                      (b) 1:50000
  - (c) 1:250000                      (d) 1:25
6. IKONOS was launched and managed by \_\_\_\_\_
- (a) Roscosmos                      (b) NASA
  - (c) Space imaging Inc (d) CSA
7. In false colour composite (FCC) image healthy vegetation appears:
- (a) Blue                      (b) Red
  - (c) Green                      (d) Orange
8. Which one of the following helps to identify the objects on the earth surface?
- (a) Atmospheric window
  - (b) Signature
  - (c) Radiometric error
  - (d) None of these

9. An 8-bits image can have total number of pixel values:
- (a) 64 (b) 128  
(c) 256 (d) 65536
10. Global Positioning Service (GPS) is based on a principle called
- (a) Transmission (b) Trilateration  
(c) Obliteration (d) Globalization

**Part B** (5 × 5 = 25)

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

11. (a) Discuss in detail about the applications of LIDAR.
- Or
- (b) What are photo mosaics and its types?
12. (a) Elaborate EMR.
- Or
- (b) Explain the process of energy interactions in the atmosphere.
13. (a) Write note on altimetry.
- Or
- (b) Write short note on spectral signature concepts.
14. (a) Explain the IRS applications in coastal resources mapping.
- Or
- (b) Explain the applications of RS in geomorphologic studies.

15. (a) Explain RDBMS.

Or

(b) What is GIS and its role in marine system?

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Explain the fundamentals of aerial photography.
17. Mention the specific resolution needs in flood zone mapping and discuss the methodology used in such studies.
18. Explain the sensors of Indian remote sensing satellites.
19. Elaborate the role of RS techniques in Oceanography.
20. Explain the projection parameters and add note on Projection transformation.
21. What is Open GIS? Give some examples of open-source GIS and explain web enabled GIS based mapping.
22. What is Microwave remote sensing? How it is different from Hyperspectral Remote Sensing? Explain the importance of microwave data.
23. Explain vector data with its advantages and disadvantages.

**R8345**

**Sub. Code**

**461204**

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

**Second Semester**

**Oceanography and Coastal Area Studies**

**AQUACULTURE**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. The most extensively used fish toxicant in fish ponds is Mahua oil cake which contain an active ingredient called
  - (a) Endrin
  - (b) Antimycin
  - (c) Saponin
  - (d) Cunaniol
  
2. Which state government has launched India's first e-Fish market app "Fish Waale"?
  - (a) Tamil Nadu
  - (b) Gujarat
  - (c) Kerala
  - (d) Assam
  
3. Spinal deformities in farmed fish occur due to the deficiency of
  - (a) Vitamin A
  - (b) Vitamin B
  - (c) Vitamin C
  - (d) Vitamin D

4. A flow-through aquaculture system is also known as
- (a) Cage culture
  - (b) Pen culture
  - (c) Pokkali culture
  - (d) Race way culture
5. Which one of the following contain LHRH-A and Domperidone?
- (a) HCG
  - (b) Ovaprim
  - (c) Antiestrogen
  - (d) Progesterone
6. Who is the father of Blue revolution in India?
- (a) Hiralal Chaudhuri
  - (b) Modadugu Gupta
  - (c) M.S. Swaminathan
  - (d) Fedor I. Baranov
7. Quicklime is necessary to a fish pond
- (a) When pH is very high
  - (b) When pH is at neutral
  - (c) When pH is very low
  - (d) When salinity is low
8. What is the role of FFDA in India?
- (a) Provides technical, financial and extension support to fish farmers
  - (b) Provides information about inclement weather, tsunamis, hurricanes, etc.
  - (c) Provides nutritional support, fishing vessels, safety kits to fishermen.
  - (d) All the above

9. The most cultivated seaweed in the world is
- (a) *Porphyra tenera*
  - (b) *Undaria pinnatifida*
  - (c) *Laminaria japonica*
  - (d) *Kappaphycus alvarezii*

10. White spot disease is caused by
- (a) *Edwardsiella piscicida*
  - (b) *Ichthyophthirius multifiliis*
  - (c) *Adenoscolex oreini*
  - (d) Aquabirnavirus

**Part B**

(5 × 5 = 25)

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

11. (a) What is coastal aquaculture? Explain the various types of coastal aquaculture practices in India.

Or

- (b) Mention the significance and potential of coastal aquaculture in India.

12. (a) List out the various consideration in the selection of sites for fish farm.

Or

- (b) Discuss briefly about open sea farming.

13. (a) Write an account on probiotics and prebiotics.

Or

- (b) Discus the methods of harvesting and economics of fish farming.

14. (a) What is meant by brood stock? Give a brief account on intensive larval rearing.

Or

- (b) Write an account on hatchery management of Oyster.
15. (a) Describe the principles and extension methods in aquaculture.

Or

- (b) Discuss the role of Governmental agencies in fisheries development.

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Give a detailed account on status and socio-economic problems of aquaculture in India.
17. Write an account on design, construction, operation and maintenance of fish farm.
18. Write an essay on fish diseases and control.
19. Give an account on seaweed culture and its importance.
20. Write an essay on shrimp hatchery.
21. Describe the various methods of induced breeding of fishes.
22. Give a detailed account on the role of fisheries extension in the development of aquaculture in India.
23. Discuss the role of Non-Governmental agencies in fisheries development in India.



**R8346**

**Sub. Code**

**461503**

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

**Second Semester**

**Oceanography and Coastal Area Studies**

**Elective – COASTAL DISASTER MANAGEMENT**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. National Institute of disaster management located at
  - (a) Bengaluru
  - (b) Delhi
  - (c) Mumbai
  - (d) Hyderabad
2. An earthquake in magnitude in the Richter scale in the range 7–7.3 is termed as
  - (a) Destructive
  - (b) Ruinous
  - (c) Catastrophic
  - (d) Disastrous
3. Which one of the following geo-chemical process is not included in the sea water intrusions?
  - (a) Anthropogenic contamination
  - (b) Inter-aquifer mixing
  - (c) Mobilization of brines
  - (d) Increasing dissolved oxygen

4. Which of the following are cumulative atmospheric disasters?

- (i) Tsunami disaster
- (ii) Flood disaster
- (iii) Tornado disaster
- (iv) Heatwave disaster
- (v) Landslide disaster

Choose the correct answer from the options given below

- (a) (i) and (iv)                      (b) (i), (ii) and (iii)
- (c) (ii), (iii) and (iv)            (d) (iii), (iv) and (v)

5. Which of the following is the element of mitigation strategy?

- (a) Public awareness and training
- (b) Risk assessment and vulnerability analysis
- (c) Applied research and technology transfer
- (d) All the above

6. The complete disaster management cycle includes

- (a) Mitigation; Preparedness; Response; Recovery
- (b) Mitigation; Rescue; Response; Relief
- (c) Mitigation; Relief; Preparedness; Rehabilitation
- (d) Mitigation; Response; Recovery; Reconstruction

7. If the earthquakes occur within the tectonic plate itself away from the plate boundaries are known as

- (a) Inter-plate earthquakes
- (b) Intra-plate earthquakes
- (c) Both (a) and (b)
- (d) None of the above

8. The rapid rise in the water level produced by onshore hurricane winds and falling barometric pressure is called

- (a) Flooding                              (b) Tsunami
- (c) Land slides                         (d) Storm surge

9. International Day for Natural Disaster Reduction is observed annually on \_\_\_\_\_.
- (a) 12<sup>th</sup> October            (b) 13<sup>th</sup> October  
(c) 14<sup>th</sup> October            (d) 15<sup>th</sup> October
10. Which of the following techniques are used as qualitative techniques for hazard evaluation?
- (i) Fault tree analysis (FTA)  
(ii) Failure modes and effect analysis (FMEA)  
(iii) Event tree analysis (ETA)  
(iv) Hazard and operability studies (HAZOP)

Choose the correct answer from the options given below

- (a) (i) only                    (b) (i) and (ii)  
(c) (ii) and (iv)            (d) (i) and (iii)

**Part B**

(5 × 5 = 25)

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

11. (a) Explain the various types of natural hazards.

Or

- (b) What is creeping disaster and explain with suitable example?

12. (a) Explain the various types of major threats to coastal ecosystem.

Or

- (b) Write an account on sea water intrusion, causes and preventive measures.

13. (a) Discuss briefly about the important elements of disaster mitigation and management.

Or

- (b) Explain the types of disaster risk reduction .

14. (a) Briefly discuss the impact of disaster on investment and climate.

Or

- (b) Explain the characteristics and types of hazards in disaster.
15. (a) Note on geohazards and their impacts with suitable example.

Or

- (b) Comment on trend analysis of Seismic activities in India.

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Write a detailed account on evaluation and human response to natural hazards.
17. Write an essay on causes, effects and solutions for depletion of fishery resources.
18. Write a short account on
- (a) Coastal flooding
  - (b) Erosion
  - (c) Tsunami
  - (d) Cyclone
19. Give an elaborate account on environmental hazards and their assessment.
20. Discuss in detail about the various strategies to control environmental hazards.
21. Write an essay on the impact of disaster on human development.
22. Give a detailed account on socio-economic and political impact of natural disaster.
23. Write an account on international decade for natural disaster reduction.