

**R5944**

**Sub. Code**

**461101**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**First Semester**

**Oceanography and CAS**

**GEOLOGICAL OCEANOGRAPHY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Define plate tectonics.
2. What is crust?
3. Note on sedimentary rock.
4. What is weathering?
5. Define beach.
6. What is continental margin?
7. Note on coastal spits.
8. What is surf zone?
9. What is placers?
10. What is submarine cables?

**Part B**

(5 × 5 = 25)

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

11. (a) Write a note on continental drift.

Or

- (b) Explain about plate boundaries.

12. (a) Describe about igneous rock formation.

Or

- (b) Write note on the chemical weathering.

13. (a) Explain about mid ocean ridges.

Or

- (b) Discuss about the types of sediment transportation.

14. (a) Discuss about depositional coastal features.

Or

- (b) Write note on physical property of particles.

15. (a) Explain about hydrocarbon resources.

Or

- (b) Write about origin of evaporates and its distribution.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Describe in detail about sea level rise and its impact on coast.
17. Explain in detail about various weathering process.

18. Write an essay on coastal geomorphological features.
  19. Draw the submarine features and discuss about the features.
  20. Write about origin, distribution and significance of manganese nodules.
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**R5945**

**Sub. Code**

**461102**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**First Semester**

**Oceanography and CAS**

**PHYSICAL OCEANOGRAPHY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Expand NOAA
2. Note on contribution of Captain James Cook in oceanography.
3. What is wave base?
4. What is a ocean current?
5. Expand SST.
6. What is density?
7. Note on Multi scanner radiometer and its uses
8. Define cyclone.
9. Note on IPCC and its role.
10. Define southern oscillation.

**Part B**

(5 × 5 = 25)

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

11. (a) Explain about Sir John Ross Arctic Ocean Expedition.

Or

- (b) Write short notes on WHOL

12. (a) Write about the motion of water particles in the ocean.

Or

- (b) Explain about geostrophic current

13. (a) Write the note on density variation in the ocean.

Or

- (b) What are the processes influence seawater salinity?

14. (a) Describe cloud formation and its classification.

Or

- (b) Application of satellites in oceanography.

15. (a) What is the difference between El Nino and La Nina and its impacts?

Or

- (b) What is global warming? What is the reason behind it?

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on development of oceanography in twentieth century.

17. Write detailed note on deep ocean circulation.

18. Explain about temperature variation in the ocean.
  19. Write a general note on the Indian climate system.
  20. Write essay on sea-level changes and its impact.
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**R5946**

**Sub. Code**

**461103**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**First Semester**

**Oceanography and CAS**

**CHEMICAL OCEANOGRAPHY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

Each answer should be in about 10 words

1. Define marine chemistry
2. *HMS Challenger* expedition
3. Noble gases
4. Chlorinity
5. Minor elements
6. Mn nodules
7. Nutrients
8. Silicon
9. DOM
10. Gelbstoff

**Part B**

(5 × 5 = 25)

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

All questions carry equal marks.

Each answer should be in about 500 words.

11. (a) Explain the constancy of ionic composition.

Or

- (b) Write note on IIOE.

12. (a) Explain briefly on chemical properties of sea water.

Or

- (b) Comment on hydrothermal vents.

13. (a) Explain the inputs of trace elements from coastal waters.

Or

- (b) Mention the oxidation and reduction potential of sea water.

14. (a) Expound the seasonal variations of phosphorous in the sea.

Or

- (b) Note down the distribution of nitrogen in the sea.

15. (a) Describe the ecological significance and organic matter in the sea.

Or

- (b) Explain briefly on petroleum hydrocarbons.



**Part C**

(3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

Each answer should be in about 1000 words.

16. Elaborate the historical developments on chemical oceanography during the past.
17. Write a detailed account on the origin, importance and distribution of nitrogen.
18. Describe the major and minor elements of Seawater.
19. Describe the origin significance and nutrient fertility of the sea.
20. Explain the sources, distribution and seasonal variation of particulate organic matter.

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**R5947**

**Sub. Code**

**461104**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**First Semester**

**Oceanography and CAS**

**BIOLOGICAL OCEANOGRAPHY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Autotrophs
2. Plankton buoyancy
3. Red Tide
4. Copepod
5. Chemosynthesis
6. Primary Production
7. Coral Polyps
8. Types of Seaweed
9. Wetlands
10. *Spinifex sericeus*

**Part B**

(5 × 5 = 25)

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

11. (a) Write a note on classification of plankton based on their size.

Or

- (b) Explain the life and habitat of Phytoplankton and zooplankton.

12. (a) What is red tide phenomenon?

Or

- (b) Explain the causes and effects of red tide phenomenon.

13. (a) What are the factors affecting the primary productivity?

Or

- (b) Write an account of estimation method of marine primary productivity.

14. (a) Write note on adaptation of seagrasses and its role of ecosystem.

Or

- (b) Give an account on conservation and management of mangrove ecosystem.

15. (a) Explain characteristics of mudflat vegetations.

Or

- (b) Give an account of conservation and management of saltmarsh ecosystem.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Briefly explain the different classifications of plankton.
  17. Explain in details about the structural and adaptations of plankton.
  18. Give an account of role on primary and secondary productivity in the aquatic ecosystem.
  19. Briefly explain the occurrence and distribution of seaweeds in India.
  20. Give an account of morphological, anatomical and physiological features of saltmarsh habitats.
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**R5948**

**Sub. Code**

**461502**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2021**

**First Semester**

**Oceanography and CAS**

**COASTAL ZONE MANAGEMENT**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

Each answer should be in about 10 words.

1. UNESCO
2. AEP
3. GoMBRT
4. Coastal Squeeze
5. El Niño
6. Great Barrier Reef
7. Bioshield
8. CRZ-4
9. MPEDA
10. Hotspot

**Part B**

(5 × 5 = 25)

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

All questions carry equal marks.

11. (a) Briefly explain Geneva conversation.

Or

- (b) Comment on UNCLOS-II.

12. (a) Write note on endangered marine animals.

Or

- (b) Write note on CITES connection.

13. (a) Briefly explain ocean acidification.

Or

- (b) Explain, how volcanic eruptions generate tsunami.

14. (a) Write the impact of shore line construction on coastal habitat.

Or

- (b) Briefly explain the marine biosphere reserves in India.

15. (a) What are the factors influence the impact of hazards?

Or

- (b) Write short note on plastic pollution.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

16. Describe in detail role of national and international agencies in ocean management.
  17. Give an account on marine biodiversity in India.
  18. Explain the microplastic and their impact on marine organisms.
  19. Explain the role of CRZ for coastal protection.
  20. How the seawall can protect from sea level rising?
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**R5949**

**Sub. Code**

**461301**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**Third Semester**

**Oceanography and CAS**

**FISH AND FISHERIES**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Explain EEZ
2. What is ex-situ conservation?
3. Differentiate the oviparous and viviparous?
4. What is maturity of fish?
5. What are the objectives of fisheries management?
6. UNCLOS
7. What is beam trawling?
8. Note on Turtle excluder device.
9. Define reservoir.
10. What is food web?



**Part B**

(5 × 5 = 25)

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

11. (a) What are the features of estuarine ecosystem?  
Or  
(b) What is fecundity? How will you calculate fecundity in fish?
12. (a) Explain the aquatic food web and pyramids.  
Or  
(b) Explain the different types of spawning of fishes.
13. (a) Define the concept and principles of fisheries management.  
Or  
(b) What are the components of fisheries management?
14. (a) What are the modern techniques used for fish capturing?  
Or  
(b) Explain about the TED.
15. (a) Explain about the role of extension in fisheries.  
Or  
(b) What are the alternative livelihood options for coastal people?

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the inland fisheries resources of India.
17. Give a detailed account on classification of fishes.

18. Explain in detail about international fishery regulation and treaties.
  19. Write a detailed note on different types of craft and gear.
  20. Write an essay on important of pelagic fisheries resources of India.
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**R5950**

**Sub. Code**

**461302**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**Third Semester**

**Oceanography and CAS**

**AQUACULTURE**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. Define Aquaculture.
2. What are the socio-economic problems in aquaculture?
3. Define water quality.
4. Write notes on farm design in aquaculture.
5. Write few examples for probiotic and prebiotic.
6. Write note on larval rearing.
7. Define brood stock.
8. What is eyestalk ablation?
9. Name few government fisheries agencies in India.
10. Write note on aquaculture extension.

**Part B**

(5 × 5 = 25)

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

11. (a) Describe the problems in coastal aquaculture.

Or

- (b) Give an account on current status of aquaculture.

12. (a) Brief note on site selection for aquaculture pond.

Or

- (b) Write note on how to maintain water quality in aquaculture.

13. (a) Brief note on disease control methods in aquaculture.

Or

- (b) Write a note on farm management.

14. (a) Brief note on fin fish hatchery management.

Or

- (b) Write note on mass production of seed.

15. (a) Explain the government agencies involved in fisheries development.

Or

- (b) Write note on Blue revolution.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on coastal aquaculture.

17. Write an essay on open sea farming in aquaculture.

18. Write an essay on seaweed resources and culture methods.
  19. Describe in detail about induced breeding.
  20. Write detail note on role of fisheries extension for the development of aquaculture in India.
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**R5951**

**Sub. Code**

**461303**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**Third Semester**

**Oceanography and CAS**

**POST-HARVEST TECHNOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. What is post-harvest technology?
2. How to handle the fish for transportation?
3. What are the factors affecting the quality of fishes?
4. How to avoid the spoilage of fishes?
5. What are the chemical treatment involved in fish processing?
6. Define cryoprotectants.
7. What are the materials used for packaging?
8. What is canning?
9. What is USFDA?
10. What are the methods involved in fishery product quality assessment?

**Part B**

(5 × 5 = 25)

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

11. (a) Write a note on handlings and transportation of fishes.

Or

- (b) Explain about insulated containers for fresh fish transportation.

12. (a) Explain the characterization and quantification of fish spoilage.

Or

- (b) What are the physiological factors affecting the fish spoilage?

13. (a) Explain the different types of freezer.

Or

- (b) Differentiate the different types cryoprotectants.

14. (a) Explain Labelling Requirements for Fish Products.

Or

- (b) What are the packaging material used in packing of fresh and frozen fish?

15. (a) Explain the chemical standards in seafood quality.

Or

- (b) Explain the EU regulation for export trade.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on sea food processing and preservation.

17. Explain in detail about post mortem changes in fishes.

18. Write an essay on quality control of fishery products based on HACCP guidelines.
  19. Write a detail note on packaging and packaging materials of fishery products.
  20. Write detail note on characterization of health hazards in seafood.
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**R5952**

**Sub. Code**

**461504**

**M.Sc. DEGREE EXAMINATION, NOVEMBER – 2021**

**Third Semester**

**Oceanography and CAS**

**COASTAL DISASTER MANAGEMENT**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

Each answer should be in about 10 words

1. Arctic
2. ISDR
3. NDRF
4. Refuges
5. Lanina
6. Disaster mitigation
7. Collision
8. Ocean acidification
9. Hotspot
10. Toranodo

**Part B**

(5 × 5 = 25)

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

All questions carry equal marks.

Each answer should be in about 500 words.

11. (a) Write short note on capacity building.

Or

- (b) Illustrates the aquatic pollution and its effect on fisheries.

12. (a) Explain the post disaster action.

Or

- (b) Describe the mitigation during earthquakes.

13. (a) Give an account on national disaster management authorities.

Or

- (b) Describe the impact of oil pollution on aquatic environment.

14. (a) Write short notes on Tsunami warning systems.

Or

- (b) How EEZ affect the coastal fisheries?

15. (a) What are the types of Natural hazards?

Or

- (b) Explain the precaution of seismic activities.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

All questions carry equal marks.

Each answer should be in about 1000 words.

16. Describe in details on types of disaster.
  17. Explain the environmental issues caused by fisheries and aquaculture activities.
  18. Write note on disasters management strategies in India.
  19. Explain the sea level rise and its impact on coastal areas.
  20. Describe the ocean acidification and its effects on marine environment.
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