

- iv) The red sea was named so because of the periodic discolouration of water by blooms of  
 a. gymnodenium b. noctiluca c. trichodesmium d. none of the above
- v) Viviparity is a remarkable adaptation shown by  
 a. holophytes b. bryophytes c. xerophytes d. hydrophytes
- vi) The nanoplankton include organisms to be retained by bolting silk fine mesh of  
 a. < 60 milimicron b. > 60 milimicron c. 1 mm d. > 1 mm
- vii) The zone where the tides form the chief environmental factor  
 a. littoral b. limnetic c. intertidal d. profundal
- viii) The body temperature of the organisms fluctuates according to that of surrounding environment are known as  
 a. homiotherms b. poikilotherms c. stenotherms d. eurytherms
- ix) The rate of metabolism in poikilotherms increases how many times for each 10°C rise in temperature  
 a. 2-3 times b. 3-4 times c. 4-5 times d. 5-10 times
- x) The changes in the temperature of the sea water influences the flora and fauna by affecting their  
 a. metabolism b. growth c. reproduction d. all of the above

4. Explain the following.

- a) Primary productivity
- b) Plankton
- c) Symbiosis
- d) Nitrogen fixation
- e) Halocline
- f) Foulers
- g) Redtide
- h) Indicator species
- i) Atoll
- j) Food chain

(10×1 = 10)

**PART-C**(Answer the following questions. (Any six)

(6×5=30)

5. Explain briefly the diurnal migration of zooplankton with suitable examples.
  6. Give a note on methods of floatation mechanism among plankton in relation to physico chemical properties of water.
  7. Write briefly the phytoplankton and zooplankton relationship in the marine environment.
  8. Explain briefly the geographical and seasonal variations of plankton production in relation to commercial fisheries.
  9. Give a note on the ecological subdivisions of the marine environment with suitable diagram.
  10. Describe the role of nitrogen cycle in the marine environment with suitable diagram.
  11. Describe about different criteria for adoption of nekton.
  12. Write short notes of the followings. (Any One)
- (a) Standing crop measurement.
- (b) Bioluminescence among marine organisms.

(1×5)

**PART-A**

[10]

1. Fill in the blanks with the appropriate word or words. (10×0.5 = 5)
- The salinity of sea water is approximately 35 ppt and tending to be lower to \_\_\_\_\_ ppt.
  - The region in which the temperature changes rapidly with change in depth is called \_\_\_\_\_.
  - Organisms which have only limited range of temperature tolerance is called \_\_\_\_\_.
  - Biomass of a population present per unit volume or area at any given time is called \_\_\_\_\_.
  - \_\_\_\_\_ is the process by which water from the subsurface level rises up, usually as a result of divergence currents.
  - The surface layer or zone in a body of water which receives ample of sunlight for the photosynthetic activity of plants is \_\_\_\_\_.
  - Light and dark bottle method is one of the common methods for estimating primary productivity was first introduced by \_\_\_\_\_.
  - The rise in temperature reduces the content of dissolved \_\_\_\_\_ causing asphyxiation in animals.
  - \_\_\_\_\_ zone lies at the junction of the land and the sea.
  - The study of the relationship the member of a population to each other and to the environment is called \_\_\_\_\_.

2. Match the following. (10×0.5 = 5)

**Group-A**

- Herbivores
- Pelagic division
- Trochophores
- Arrow worms
- Holo planktons
- Alima
- Steeman and Nielsen
- Plant nutrient
- Umbellae
- Porpoises

**Group B**

- Annelids
- C<sup>14</sup> method
- Coelenterates
- Mammals
- NPK
- Zooplankton
- Chaetognath
- Lucifer
- Stomatopods
- Marine environment

**PART-B**

[20]

3. Choose the most appropriate answer: (10×1 = 10)
- The cladocerans represented among crustacean are  
a. podon      b. evadne      c. penilia      d. all of the above
  - The chaetognaths are  
a. holoplanktonic      b. meroplanktonic      c. nekotonic      d. none of the above
  - The commonest genus among planktonic foraminiferans are  
a. obelia      b. porpita      c. globigerina      d. none of the above