

Answer the Following Questions:

Question One: (24 marks)

Put ✓ or × and correct the false

- 1- All Tintinnids are loricate holoplanktonic ciliates.
- 2- All plankton are microscopic (too small to see without a microscope).
- 3- In copepods, the first and 2nd antennae are sensory, sometimes used for locomotion
- 4- The arrow worms are self-fertilized and hermaphrodite.
- 5- Calanoids contain both egg carriers (minority) & and egg scatters (predominates)
- 6- The neritic zone extends from the shoreline to the edge of the continental shelf.
- 7- A decrease in phytoplankton abundance affects higher trophic levels.
- 8- Repeated asexual reproduction in diatoms leads to progressive size reduction.
- 9- Bioluminescence occurs due to the oxidation of luciferin by luciferase.
- 10- Agglutinated loricae are common in offshore oceanic waters.
- 11- True jellyfish belong to the class Hydrozoa.
- 12- The planula larva settles and develops into a medusa.
- 13- Sampling gelatinous zooplankton using plankton nets is easy and accurate
- 14- Gelatinous zooplankton are ecologically insignificant due to their fragile bodies.
- 15- Cyclopoid copepods are primarily benthic organisms.
- 16- Sexual dimorphism in copepods is commonly seen in the fifth pair of legs.
- 17- The nauplius and metanauplius stages in euphausiids are non-feeding.
- 18- Krill feed exclusively on phytoplankton year-round.
- 19- Mysids are commonly known as opossum shrimps.
- 20- Mysids are usually dominant components of marine plankton biomass.
- 21- Most adult decapods are planktonic throughout their lives.
- 22- Marine cladocerans are more diverse than freshwater forms.
- 23- Parthenogenetic reproduction in cladocerans produces free-swimming larvae.
- 24- Rhopalia are sensory structures in jellyfish.

Question Two: (15 marks)

Answer the following items:

- 1- Discuss the life cycle of copepods.
- 2- Diatoms' asexual reproduction is not continued, discuss?
- 3- How do red tides appear in the water?

Question Three: (18 marks)

Choose the correct answer

- 1- Jellyfish are considered plankton because they:
(drift with currents — are microscopic — lack tissues — are autotrophic)
- 2- Toxic plankton blooms may result in:
(fish kills — coral construction — oxygen enrichment — nutrient removal)
- 3- Phytoplankton are most abundant in:
(surface waters — deep sea — sediments — abyssal plains)
- 4- Which cnidarian group lacks a medusa stage?
(Anthozoa — Scyphozoa — Cubozoa — Hydrozoa)
- 5- Most planktonic cnidarians are primarily:
(predators — herbivores — detritivores — filter feeders)

- 6- The vegetative stage in scyphozoans is usually:
(a single individual — colonial — parasitic — absent)
- 7- The statocyst in ctenophores is located at the:
(aboral end — oral end — mid-body — tentacle base)
- 8- . Many ctenophores are difficult to preserve because they:
(are extremely watery — possess toxic tissues — have hard skeletons — rapidly calcify)
- 9- The ecological importance of gelatinous zooplankton has received increasing attention due to their:
(impacts on fisheries and ecosystems — role in oxygen production — sediment formation — calcium cycling)
- 10- Despite low diversity, which genus is often numerically dominant?
(Oithona — Calanus — Euchaeta — Neocalanus)
- 11- The first feeding stage in euphausiids is the:
(calytopis — nauplius — metanauplius — furcilia)
- 12- The statocyst in mysids is located in the:
(tail — thorax — antenna — eye)
- 13- Only a few shrimp families are fully:
(holoplanktonic — benthic — freshwater — parasitic)
- 14- Pedogenesis refers to:
(embryos producing eggs within brood pouch — alternation of generations — delayed development — larval fusion)
- 15- Zooplankton occupy which trophic position mainly?
(secondary consumers — primary producers — decomposers — autotrophs)
- 16- The overall ecological importance of plankton lies in their role in:
(sustaining marine ecosystems — replacing benthic fauna — controlling tides — forming sediments)
- 17- Holoplankton remain planktonic because they are adapted to:
(permanent pelagic life — benthic settlement — parasitic feeding — attachment)
- 18- Excessive nutrient input may cause:
(harmful algal blooms — coral formation — oxygen enrichment — biodiversity increase)

Question Four: (13 marks)

Complete the missing parts:

- the shells of diatoms made of ...(1).....
- Most planktonic forms of copepods belong to them, and this group contains the largest free-living species and 90%+ of the diversity ...(2)....
- The copepods are classified into (3)....
- It is a dominant in polar water with external gills, 2 pairs of antennae, and well-developed eyes.(4).....
- Tintinnids traditionally have been divided into two groups ...(5)..
- A copepod order with few marine holoplanktonic species (mostly benthic), e.g., *Euterpina*(6).....
- The feeding appendages in copepods are ...(7).....,
- The anterior portion (head and main body) of a calanoid copepod is the ...(8).....
- The ecological and biological importance of diatoms are(9).....(10).....,
- Group of pelagic tunicates creates an elaborate mucus feeding structure (house) to concentrate small plankton for feeding ...(11).....
- In Siphonophores colonies with polyps specialized for 4 typical tasks...(12).....
- In this group of molluscs, zooplankton, the foot is modified into 2 lobes for swimming- they secrete mucus feeding nets ...(13)...

**End of Questions
With Best wishes**

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