**Bachelor of Science Examination, 2024**

**(1st Year, 2nd Semester)**

**Geology**

**Paper : MDC/TH/11/101C**

**(Environmental Geology and Ocean Sciences)**

*Time* : *Two Hours* *Full Marks* : 40

Q. No. **1** and Q. No. **2** are compulsory and answer ***any six*** from the rest.

**1** Write the correct answer from the following questions : 1×5=5

*(i)* The most biologically rich area of the continental margin is

*(a)* continental shelf

*(b)* continental rise

*(c)* abyssal sea floor

*(d)* continental slope

*(ii)* Another name for the epipelagic zone is

*(a)* aphotic zone

*(b)* supralittoral zone

*(c)* abyssal zone

*(d)* photic zone

*(iii)* The magnetism in igneous (volcanic) rocks formed at the South Pole would be oriented

*(a)* vertically

*(b)* horizontally

*(c)* pointing towards the south

*(d)* at about 65° to the horizontally

*(iv)* Which of the following regions typically has the highest primary productivity per unit surface area of the ocean?

*(a)* Zones of upwelling

*(b)* Temperate zones

*(c)* Tropical waters

*(d)* Centers of ocean gyres

*(v)* The net primary production is equal to the gross primary production minus

*(a)* production that is broken down during plant respiration

*(b)* biomass

*(c)* production lost due to decomposition

*(d)* production generated by seagrasses

**2.** In the world map (attached), identify and mark two zones/places showing 5

*(a)* Cobalt crusts

*(b)* Manganese nodules





**3.** Discuss the layers of the benthic environment and respective general nature of life. 5

**4.** Discuss briefly that primary production of microorganisms varies geographically and seasonally. 5

**5.** Describe the major features of continental shelf and continental slope. 5

**6.** Describe the most common types of cosmogenous sediment and write the probable source of these particles. 5

**7.** What are the processes responsible for ocean surface currents? 5

**8.** What are the different types of plate boundaries? In which type of plate boundaries do you expect Black Smokers? Show at least two zones/places in the world map where black smokers are found. 5

**9.** Write a short note on (***any one***) : 5

*(a)* Biogenous sediments

*(b)* Depth Zones of Oceanic Province

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