

**T.Y.B.SC. SEM – V (2014 Course) : SUMMER - 2019**  
**SUBJECT: CHEMISTRY: ENVIRONMENTAL CHEMISTRY-V**

Day : Saturday  
Date : 27/04/2019

**S-2019-1019**

Time : 12.00 NOON TO 02.00 PM  
Max. Marks : 40.

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the **RIGHT** indicate full marks.
  - 3) Answers to both the sections should be written in **SEPARATE** answer books.
  - 4) Draw neat diagrams **WHEREVER** necessary.
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**SECTION-I**

- Q.1** Answer any **TWO** of the following: **(10)**
- a) Explain the phenomenon El Nino. How does it affect the global climate?
  - b) Write a brief note on “Chernobyl disaster.”
  - c) Describe different chemical processes leading to formation of inorganic particulate matter in the atmosphere.
- Q.2** Answer any **TWO** of the following: **(10)**
- a) Describe following methods used in sampling of Gases and vapours  
(i) cold trapping (ii) adsorption.
  - b) How does earth manages its radiation balance? Elaborate on the term “Albedo.”
  - c) Draw a neat diagram of catalytic converter used in auto engines. How does it function to treat auto emissions?

**SECTION-II**

- Q.3** Answer any **TWO** of the following: **(10)**
- a) Discuss the entire chemical evolution process till the appearance of first living cell on the earth.
  - b) “The pH of the sea water is constant at  $8.1 \pm 0.2$ ”. Explain this statement.
  - c) Give some examples of microbially mediated redox reactions in natural water.
- Q.4** Answer any **TWO** of the following: **(10)**
- a) Outline the historical simulation experiment known as “Urey-Millar experiment.”
  - b) Discuss the origin of the Minamata disease in terms of Hg pollution. How is the disease brought under control?
  - c) Discuss the structure and role of the detergents as a major water pollutant.

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