

T.Y.B.SC. SEM – V (CBCS - 2016 Course) : SUMMER - 2019
SUBJECT: CHEMISTRY: ENVIRONMENT CHEMISTRY-I

Day: Wednesday
Date: 24/04/2019

Time: 11.00 A.M. To 02.00 P.M.
Max. Marks: 60

S-2019-0889

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat labelled diagrams **WHEREVER** necessary.

Q.1 Attempt **ANY TWO** of the following: (12)

- a) Describe in detail the evolution of the earth's atmosphere. What reasons can be given for the change from a reducing to an oxidizing atmosphere.
- b) Give an account of:
 - i) Biodegradation of pesticides
 - ii) Oil spill and Marine pollution
- c) Describe methods for the estimation of any one of the following parameters in water sample:
 - i) PO_4
 - ii) NH_3
 - iii) NO_3

Q.2 Attempt **ANY TWO** of the following: (12)

- a) How would you broadly divide the major regions of the atmosphere? State their respective altitudes and temperature ranges.
- b) Define the following terms (any two):
 - i) COD
 - ii) Persistence of pesticides
 - iii) DO
- c) Explain and illustrate (any two):
 - i) SO_2 monitor
 - ii) H_2S monitor
 - iii) Hydrocarbons monitor

Q.3 Attempt **ANY TWO** of the following: (12)

- a) Illustrate and explain the Hydrological cycle.
- b) Explain the environmental chemistry of any one of the following in an aquatic ecosystem:
 - i) As
 - ii) Hg
 - iii) Cu
- c) Discuss the greenhouse gases and their contribution to global warming.

Q.4 Attempt **ANY THREE** of the following: (12)

- a) How does the earth manage its radiation balance so as to maintain an average surface temperature of 15°C ?
- b) Discuss the reactions of free radicals in the atmosphere.
- c) How do you account for Pb in particulate matter? Can you suggest a corrective step for making air free from Pb.
- d) Illustrate the sources and sink of carbon dioxide.

Q.5 Attempt **ANY FOUR** of the following: (12)

- a) What are the chemical processes for the formation of inorganic particulate matter in the atmosphere?
- b) Write a note on Bhopal disaster.
- c) Give an account of water pollution due to detergents.
- d) What is "Photochemical smog"?
- e) Set up sea water model and compare with the real system.
- f) Define "Hydrological Cycle".

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