



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester – 2019

Paper: Environmental Chemistry

Course Code: CHEM-402 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the correct option.

(10x1=10)

- i. The saline soil contains _____ of sodium and potassium.
- a. Phosphate and sulphates c. Phosphates and chlorides
b. Chlorides and sulphates d. Bromides and chlorides
- ii. A soil is made up of _____ phases
- a. Two c. Four
b. Three d. Five
- iii. Poor soil aeration results in accumulation of _____
- a. CO₂ c. O₂
b. SO₂ d. H₂O
- iv. Acidic soil has pH in the range
- a. 4 – 5 c. 5 – 6.5
b. 5 – 6 d. 6 – 6.5
- v. The scientific name for DDT is _____
- a. Paradichlorodiphenyltrichloroethane
b. 1-dichlorodiphenyltrichloroethane
c. 2-dichlorodiphenyltrichloroethane
d. dichlorodiphenyltrichlorobutane
- vi. Industrial, municipal sewage and treatment plants are examples of _____
- a. Diffused sources c. point sources
b. Stationary sources d. line sources
- vii. Deforestation may reduce the chances of _____
- a. Rain fall c. Erosion of surface soil
b. Frequent cyclones d. Frequent landslides
- viii. DDT belongs to _____ hydrocarbons
- a. Aromatic c. Brominated
b. Chlorinated d. FeCrO₄
- ix. Mirex (C₁₀Cl₁₂) is a synthetic _____
- a. Pesticide c. Insecticide
b. Herbicide d. Fungicide
- x. _____ is a source of chlorofluorocarbons.
- a. Aerosol spray foams c. Exhaust fumes of motor vehicles
b. Incomplete burning of wood d. Both A and B



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Attempt all the short questions.

(2x10=20)

- a) Define soil and give its composition.
- b) What is meant by eutrophication? Give its main reasons.
- c) Differentiate between macronutrients and micronutrients giving examples.
- d) How is environment affected by PCBs?
- e) How does pH of soil affect the availability of nutrients?
- f) Give at least 4 volatile organic compounds that pollute the soil.
- g) How is biodiversity affected by the presence of pollutants?
- h) Define the term "ion-exchange capacity of soil".
- i) How is environmental monitoring different than environmental analysis?
- j) How are micronutrients beneficial for plant growth?

Q.3. Long Questions

(5x6=30)

- a) How are littering and mining helpful in increasing the soil quality?
- b) Explain the soil erosion and some methods of its prevention.
- c) Explain the hazardous effects of aflatoxins on environment, especially on human health.
- d) Explain the concept of green chemistry, giving its principles.
- e) Explain the principle and applications of UV and visible spectroscopy for environmental analysis.
- f) What is atomic absorption spectroscopy? Give its role in environmental monitoring.