



# UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester – 2020

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. Order of the size of mineral soil matter is
  - a. Gravel > sand > silt > clay
  - b. Sand > clay > silt > gravel
  - c. Gravel > silt > sand > clay
  - d. Sand > silt > gravel > clay
- ii. Technology can be used to harness renewable sources of
  - a. energy
  - b. food
  - c. light
  - d. heat
- iii. Reduce, reuse and recycle can conserve our
  - a. environment
  - b. food
  - c. climate
  - d. oxygen
- iv. Green chemistry is
  - a. Sustainable chemistry
  - b. a philosophy for all chemistry practices
  - c. Safe way of thinking and practicing chemistry
  - d. All above
- v. Aflatoxin is produced by the fungus?
  - a. Aspergillus flavus
  - b. Aspergillus niger
  - c. Penicillium marneffeii
  - d. Candida albicans
- vi. POPs are dangerous as
  - a. They are Lipophilic
  - b. They can travel long distances
  - c. Persistent in environment
  - d. All above
- vii. Clay minerals are
  - a. Colloidal in nature
  - b. negatively charged
  - c. Layered silicates
  - d. All above
- viii. The quantity of DDT at each trophic level in food chain:
  - a. decreases
  - b. remains same
  - c. increases
  - d. changes
- ix. Contour bedding and terracing help to control soil erosion by
  - a. Water
  - b. wind
  - c. a & b
- x. Secondary macronutrients for plants in soil are
  - a. N, P, K
  - b. C, H, O
  - c. Ca, Mg, S
  - d. All above



**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2. Answer the following short questions.**

**(10x2=20)**

1. Toxicity of Cr is attributed to Cr(IV) not to Cr(III). Why?
2. What is CEC? Why soil can hold only cations?
3. what are major causes of soil erosion?
4. What are aflatoxins?
5. Discuss control measures for water erosion.
6. Differentiate between macro and micro nutrients in soil.
7. Describe the principle of UV-visible spectroscopy.
8. Discuss the main sources of lead in environment.
9. Why PCBs were banned?
10. What is atom economy?

**Q.3. Answer the following Questions**

**(5x6=30)**

1. What is soil pollution? What are major causes of soil pollution?
2. Briefly discuss persistent organic pollutants.
3. Discuss principle of HPLC and its application in environmental monitoring.
4. Briefly describe the composition of a typical soil.
5. Write a note on legislation aspects of environmental pollution.