

Roll No. : .....

Total No. of Questions : 16 ]

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# **CENV-117**

**M.Sc. (Ist Semester) Examination, Jan.-2023**

**ENVIRONMENTAL SCIENCE**

Paper - ESCC-103

**(Environment Chemistry)**

*Time : 3 Hours ]*

*[ Maximum Marks : 40*

**Section-A**

**(Marks : 1 × 10 = 10)**

*Note :-* The candidate is required to answer all the *ten* questions carries 1 mark each. The answer should not exceed 50 words.

**Section-B**

**(Marks : 3 × 5 = 15)**

*Note :-* The candidate is required to answer *five* questions by selecting at least *one* question from each Unit. Each question carries 3 marks. Answer should not exceed 200 words.

**Section-C**

**(Marks : 5 × 3 = 15)**

*Note :-* The candidate is required to answer *three* questions by selecting *one* question from each Unit. Each question carries 5 marks. The answer should not exceed 500 words.

**BRI-946**

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**CENV-117 P.T.O.**

### Section–A

1. Attempt all questions :
  - (i) Write any *two* properties of acids.
  - (ii) Write names of any *two* gaseous laws.
  - (iii) What is Ambient Air ?
  - (iv) Define Smog.
  - (v) What is Biological Oxygen Demand (BOD) ?
  - (vi) What is Filtration ?
  - (vii) What is PAN ?
  - (viii) Define Air Pollution.
  - (ix) What are Aitken Particles ?
  - (x) What are Radionuclides ?

### Section–B

#### Unit–I

2. Different between acids and bases.
3. What is the Arrhenius concept of acids and bases ?
4. Write note on carbonate system.

#### Unit–II

5. What is Photochemical Smog ? Write short note on it.
6. How urban air can cause serious impacts on human health ? Discuss.
7. Classify the various elements present in air and write down the composition of natural air.

#### Unit–III

8. Give detailed account on NPK.
9. What is Redox Potential ? Write note on it.
10. Explain the concept of dissolved oxygen in water.

## **Section–C**

### **Unit–I**

11. What is Gibbs' Free Energy ? How does it play important role in spontaneousness of chemical reactions ? Explain.
12. Write notes on the following :
  - (a) Stoichiometry
  - (b) Unsaturated and Saturated hydrocarbons.

### **Unit–II**

13. Discuss in detail about the chemical processes for formation of inorganic and organic particulate matter with examples.
14. Explain the oxygen and ozone chemistry of the atmosphere in detail.

### **Unit–III**

15. What do you mean by Sedimentation ? Explain with suitable examples.
16. What is Soil ? Explain different components of soil with example.