



C-14-CHPC/EC/PET-104

4036

BOARD DIPLOMA EXAMINATION, (C-14)

APRIL/MAY—2015

DECE—FIRST YEAR EXAMINATION

ENGINEERING CHEMISTRY AND  
ENVIRONMENTAL STUDIES

Time : 3 hours ]

[ Total Marks : 80

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**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Write the differences between orbit and orbital.
2. Define coordinate covalent bond. Give an example.
3. Define (a) normality and (b) molality.
4. Explain Arrhenius concept of acids and bases.
5. Define (a) conductor and (b) insulator.
6. What are the salts responsible for hardness of water?
7. Explain addition polymerization with an example.
8. Classify the fuels based on their physical state. Give examples.
9. Write a short note on acid rain.
10. Classify the air pollutants based on their origin. Give examples.

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**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11.** (a) Explain Bohr's atomic theory. Write its limitations. 6  
(b) Write the important postulates of electronic theory of valency. 4
- 12.** (a) Find the weight of NaOH required to prepare 500 ml of 0.2 M solution. 5  
(b) Define buffer solution. Write any three applications of buffer solutions. 5
- 13.** (a) Define (i) Mineral, (ii) Ore, (iii) Gangue and (iv) Flux. 4  
(b) Explain roasting and calcination processes with examples. 6
- 14.** (a) Calculate the number of Faradays of electricity required to deposit 60 grams of magnesium. 4  
(b) Explain the construction of galvanic cell and its functioning. 6
- 15.** (a) Explain the mechanism of rusting of iron. 5  
(b) Describe sacrificial anode method to prevent corrosion. 5
- 16.** (a) Explain Permutit method with a neat diagram. 7  
(b) State any three essential qualities of drinking water. 3
- 17.** (a) Write the methods of preparation of (i) Polythene, (ii) Teflon and (iii) PVC. 6  
(b) Explain vulcanization of rubber. 4
- 18.** (a) Explain any five causes of air pollution. 5  
(b) Write the effects of deforestation. 5

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