



C14-EE/CHPP-104

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2017

DEEE—FIRST YEAR EXAMINATION

ENGINEERING CHEMISTRY AND  
ENVIRONMENTAL STUDIES

Time: 3 hours ]

[ Total Marks : 80

**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. Calculate oxidation number of S in  $H_2SO_4$  and N in  $HNO_3$ .
3. Define equivalent weight of an acid and equivalent weight of a salt with examples.
4. Define pH. Calculate pH of 0.001 M HCl solution.
5. Write any three differences between metallic conductor and electrolytic conductor.
6. What are the salts responsible for hardness of water?
7. Explain addition polymerisation with an example.
8. Define fuel. State any four characteristics of good fuel.
9. Define the terms (a) ecosystem and (b) air pollution.
10. What are the renewable and non-renewable energy sources?

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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 model. 6  
(b) Write the properties of covalent compounds. 4
- 12.** (a) Explain Bronsted-Lowry theory of acids and bases. 5  
(b) Define molarity. Find the molarity of the solution prepared by dissolving 5.3 grams of  $\text{Na}_2\text{CO}_3$  in 500 ml of water. (GMW-106) 5
- 13.** (a) Explain froth flotation process. 4  
(b) Discuss about roasting, calcination and smelting with examples. 6
- 14.** (a) Write the differences between electrolytic cell and galvanic cell. 5  
(b) Explain Faraday's laws of electrolysis. 5
- 15.** (a) What are the essential qualities of drinking water? 4  
(b) Describe Permutit process of softening of hard water. 6
- 16.** (a) Explain the process of vulcanization. 4  
(b) Explain the preparations and two uses of the following plastics : 6  
(i) Polythene  
(ii) PVC  
(iii) Bakelite
- 17.** (a) What is rusting? Explain the mechanism of rusting of iron. 6  
(b) Write any four factors that influence the rate of corrosion. 4
- 18.** (a) Write a note on greenhouse effect. 4  
(b) Explain the methods of control of air pollution. 6

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