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C09-A/AA/AEI/C/CM/EC/EE/  
CHST/FW/IT/M/MNG/MET/PKG/TT-104

**3004**

**BOARD DIPLOMA EXAMINATION, (C-09)  
OCTOBER/NOVEMBER-2018  
FIRST YEAR EXAMINATION**

ENGINEERING CHEMISTRY AND ENVIRONMENTAL STUDIES

Time : 3 Hours ]

[ Total Marks: 80

**PART-A**

3X10=30

- Instructions :**
1. Answer **All** questions.
  2. Each question carries **Three** marks.
  3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. Write a short note on metallic bond.
2. Define oxidation. Give an example.
3. Define Normality. Write the formula for Normality.
4. Discuss the Strength of acids and bases according to Arrhenius acid base theory.
5. What are strong electrolytes and weak electrolytes? Give an example for each.
6. State three disadvantages of using hard water in industries.
7. List out any three advantages of plastics over traditional materials.
8. Define primary and secondary fuels giving one example each.
9. Write a brief note on Green House effect.
10. Define the following terms with examples (i) Decomposers (ii) Consumers.

## PART-B

10X5=50

*Instructions* :

1. Answer any **Five** questions
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. What are quantum numbers? Explain the significance of various quantum numbers.
12. (a) Define terms (i) mineral (ii) Ore (iii) Gangue (iv) Flux (v) Slag.  
(b) Explain the concentration of ore by froth floatation process.
13. (a) Define Galvanic Cell. Explain the construction of galvanic cell with an example.  
(b) Write any four differences between electrolyte cell galvanic cell.
14. (a) Describe the termination of (i) composition cell (ii) Stress cell (iii) Concentration cell.  
(b) Explain the different types of protective coatings used in prevention of corrosion.
15. (a) Explain the municipal method of treatment of water for drinking purpose with a neat diagram.  
(b) What is temporary hardness and permanent hardness? Write its causes.
16. (a) Explain the processing of Natural rubber from latex.  
(b) Give a method of preparation and two uses of (i) Polythene and (ii) PVC.
17. (a) What are the effects of deforestation?  
(b) Explain any three methods of control of air pollution.
18. (a) Define molarity calculate the molarity of 2 litre solution containing 4 gm of NaOH (GMW of NaOH=40)  
(b) Define buffer solution. What are different types of buffer solutions? Give an example for each type.

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