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C09-CHPC-104/C09-EC-104

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BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2013

DECE—FIRST YEAR EXAMINATION

ENGINEERING CHEMISTRY AND
ENVIRONMENTAL STUDIES

Time : 3 hours]

[Total Marks : 80

PART—A

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. What are the fundamental particles of an atom? Give their mass and charge.
2. Write any three differences between ionic and covalent compounds.
3. Define solution, solute and solvent.
4. Write any three applications of buffer solution.
5. Define conductor, insulator, electrolyte and non-electrolyte.
6. Define soft water and hard water with examples.
7. State any three differences between thermoplastic and thermosetting plastic.

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8. Define fuel and classify the fuels.
9. Define the terms pollutant, pollution and contaminant.
10. Define producers, consumers and decomposers with examples.

PART—B

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. Give the postulates of Bohr's atomic theory. What are its limitations? 10
12. (a) Define molarity. 5.3 gm of Na_2CO_3 is dissolved in three liters of water. What is the molarity of the solution? 5
(b) Explain Brønsted-Lowry theory of acids and bases and its limitations. 5
13. (a) Explain the characteristics of metals and distinguish with non-metals. 6
(b) Define metallurgy, ore gangue, flux and slag. 4
14. (a) Explain Faraday's laws of electrolysis. 4
(b) A current of 0.5 amp is passed through copper sulphate solution for 30 minutes. Calculate the weight of copper deposited. (Atomic weight of Cu=63.5) 6
15. (a) Define corrosion and explain any four factors influencing the rate of corrosion. 5
(b) Explain the concept of electrochemical theory of corrosion. 5

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- 16.** (a) List out any four essential qualities of drinking water. 4
(b) Describe the method of municipal treatment of water for drinking purpose. 6
- 17.** (a) Define the term plastic and list out any five advantages of using plastics. 6
(b) What is rubber? Explain the processing of natural rubber from latex. 4
- 18.** (a) Define air pollution and state any three causes of air pollution. 4
(b) Explain about renewable and non-renewable energy sources. 6

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