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C16–C–104/C16–CM–104

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BOARD DIPLOMA EXAMINATION, (C–16)

OCT/NOV—2017

DCE—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 any three differences between orbit and orbital.

2. Give the number of electrons, protons and neutrons present in Na.

3. Define mole. Calculate the number of moles present in 90 gm of water.

4. Define buffer solution. State any two uses of buffer solution.

5. Write any three differences between electrolytic cell and galvanic cell.

6. What are the disadvantages of using hard water?

7. What are the elastomers? Give example.

8. What are the characteristics of good fuel?

9. Write a short note on greenhouse effect.

10. Define air pollution. Write any two causes of air pollution.

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)* What are the important postulates of Bohr's theory? Mention the limitation of this theory. 6

(b) Draw the shapes of *s*,*p*,*d* orbitals. 4

12. *(a)* Define equivalent weight of acid and base with one example. 5

(b) Explain the concept of Lewis acid and Lewis base with examples. 5

13. *(a)* Define the following terms : 5

(i) Mineral

(ii) Ore

(iii) Metallurgy

(iv) Gangue

(v) Flux

(b) Explain calcination and roasting with examples. 5

14. *(a)* Explain the construction and functioning of a galvanic cell. 5

(b) A current of 2 amp passing through silver nitrate solution for 10 minutes deposits 1·4292 gm of silver. What is the electrochemical equivalent of silver? 5

15. *(a)* What is the rust? Explain the mechanism of rusting of iron. 5

(b) What are the factors favouring for the formation of corrosion? 5

16. *(a)* Describe the method of municipal treatment of water. 6

(b) Define osmosis and reverse osmosis. 4

17. *(a)* Define and explain addition polymerization and condensation polymerization with examples. 5

(b) Distinguish between thermoplastics and thermosetting plastics. 5

18. *(a)* Explain about ecosystem, producers, consumers and decomposers. 5

(b) Write the effects of water pollution. 5

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