C20-EE-CHPP–**104**

7037

BOARD DIPLOMA EXAMINATION, (C-20)

SEPTEMBER/OCTOBER—2021

DEEE - FIRST YEAR EXAMINATION

ENGINEERING CHEMISTRY AND ENVIRONMENTAL STUDIES

Time : 3 hours]

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. Define atomic number and mass number. How many electrons, protons and neutrons are present in $_{17}Cl^{35}$?

2. Find the equivalent of *(a)* H_2SO_4, *(b)* NaOH and *(c)* Na_2CO_3.

3. What is conjugate acid base pair? Give one example.

4. Define electrochemical equivalent and equivalent weight.

5. Write essential qualities of drinking water.

6. How polythene is prepared? Write its uses.

7. Write the composition and uses of producer gas.

8. What is vinegar? Write its uses.

9. Write any two control methods of water pollution.

10. What are primary and secondary pollutants? Give examples.

1   [*Contd...*

PART—B

Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain significance of principal and azimuthal quantum numbers.

OR

(b) Define ionic bond. Write the important properties of ionic compounds.

12. *(a)* Define molarity. Calculate the weight of Na_2CO_3 required to prepare 100 ml of 0·5 M Na_3CO_3 solution.

OR

(b) Explain Arrhenius acid-base theory.

13. *(a)* Write the important differences between metals and non-metals.

OR

(b) Define electrolysis. Explain electrolysis in molten NaCl.

14. *(a)* What is cathodic protection? Explain sacrificial anode method for prevention of corrosion.

OR

(b) Define osmosis and reverse osmosis. Write the advantages of reverse osmosis.

15. *(a)* Explain the preparation and uses of *(a)* PVC and *(b)* Teflon.

OR

(b) Explain any four causes of air pollution.

PART—C

10×1=10

Instructions : (1) Answer the following question.

(2) It carries **ten** marks.

(3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. What is vulcanisation? Explain vulcanization of rubber with equations. Mention the properties of vulcanized rubber.

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