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C

Total No. of Questions: 21
Total No. of Printed Pages: 2

Regd. No.

Part - III

CHEMISTRY

Paper – I

(English Version)

Time : 3 Hours

Max. Marks : 60

SECTION – A

(10 × 2 = 20)

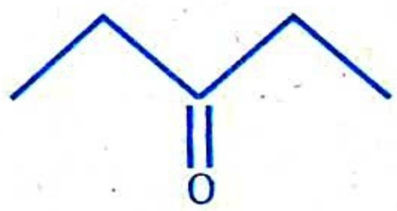
Note: (i) Answer **ALL** questions.

(ii) Each question carries **TWO** marks.

(iii) All are very short answer type questions.

1. What is Chemical Oxygen Demand (COD)?
2. Lithium salts are mostly hydrated. Why?
3. Name any two man–made silicates.
4. Which oxides cause acid rain? What is its pH value?
5. Describe the importance of Plaster of Paris.
6. Give the hybridization of carbon in

   a. CO_3^{-2} b. diamond

   c. graphite d. fullerene
7. State Graham's law of diffusion.
8. What is a redox concept? Give an example.
9. What is meant by ionic product of water?
10. Write the IUPAC name of  , 

SECTION – B

(6 × 4 = 24)

Note: (i) Answer **ANY SIX** questions.

(ii) Each question carries **FOUR** marks.

(iii) All are of short answer type questions.

11. Explain the hybridization involved in SF_6 molecule.

12. Deduce (a) Boyle's law and (b) Charles' law from Kinetic gas equation.

13. Write the general properties of Ionic Compounds.

14. Balance the following redox reaction by ion–electron method:

H_2O_2 (aq) + Fe^{2+} (aq) $\longrightarrow$ Fe^{3+} (aq) + H_2O (l) (in acidic solution)

15. Explain extensive and intensive properties.

16. What is a conjugate acid–base pair? Illustrate with one example.

17. Name the isotopes of hydrogen. What is the ratio of the masses of these isotopes?

18. Explain borax bead test with a suitable example.

SECTION – C

(2 × 8 = 16)

Note: (i) Answer **ANY TWO** questions.

(ii) Each question carries **EIGHT** marks.

(iii) All are long answer type questions.

19. What are the postulates of Bohr's model of hydrogen atom? Discuss the importance of this model to explain various series of line spectra in hydrogen atom.

20. Write an essay on *s*, *p*, *d*, and *f* block elements.

21. How does acetylene react with the following reagents? Give the corresponding equations and name the products formed in the reactions.

a. Water

b. Hydrogen

c. Halogens

d. Hydrogen halide