



Total No. of Questions : 21

Total No. of Printed Pages : 2

Regd. No.	
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# **Part - III**

# **CHEMISTRY - PAPER - I**

## (English Version)

**Time : 3 Hours**

Max. Marks : 60

**Note :** Read the following instructions carefully.

- (i) Answer all questions of Section-A. Answer any six questions out of eight questions from Section-B and answer any two questions out of three questions from Section-C.

(ii) In Section-A, questions from Sr. Nos. 1 to 10 are of "Very short answer type". Each question carries two marks. Every answer may be limited to two or three sentences. Answer all these at one place in the same order.

(iii) In Section-B, questions from Sr. Nos. 11 to 18 are of "Short answer type". Each question carries four marks. Every answer may be limited to 75 words.

(iv) In Section-C, questions from Sr. Nos. 19 to 21 are of "Long answer type". Each question carries eight marks. Every answer may be limited to 300 words.

(v) Draw labelled diagrams wherever necessary for questions in Section-B and Section-C.



# SECTION - A

**Note :** Answer all questions.

10x2=20

- No**

  - Which of the gases diffuses faster among  $N_2$ ,  $O_2$  and  $CH_4$ ? Why?
  - How many number of moles of glucose are present in 540 gms of glucose?
  - What are intensive and extensive properties?
  - What is the relationship between  $C_p$  and  $C_v$ ?
  - What is heterogeneous equilibrium? Write two heterogeneous reactions.
  - Why is gypsum added to cement?
  - Describe the important uses of caustic soda.
  - What is Bio-Chemical Oxygen Demand (BOD)?
  - What is PAN? What effect is caused by it?
  - How do you prepare ethyl chloride from ethylene?



**SECTION - B****Note :** Answer any six questions.

11. Explain the hybridization of P involved in formation of  $\text{PCl}_5$  molecule.
12. Explain the formation of Coordinate Covalent Bond with one example.
13. Deduce (a) Boyle's law and (b) Charle's law from Kinetic gas equation.
14. A carbon compound contains 12.8% carbon, 2.1% hydrogen, 85.1% bromine. The molecular weight of the compound is 187.9. Calculate the molecular formula.
15. What is a conjugate acid - base pair ? Illustrate with one example.
16. Write a note on heavy water.
17. Explain borax bead test with a suitable example.
18. Explain the difference in properties of diamond and graphite on the basis of their structure.

**SECTION - C****Note :** Answer any two questions.**2x8=16**

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 do we get benzene from acetylene ? Give the corresponding equation. Explain the halogenation, alkylation, acylation, nitration and sulphonation of benzene.

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