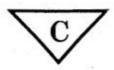
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Total No. of Questions - 21
Total No. of Printed Pages - 2

Regd.		4			
No.					

# Part - III CHEMISTRY, Paper - I (English Version)

Time: 3 hours

Max. Marks: 60

Note: Read the following instructions carefully.

- 1) Answer all questions of Section 'A'. Answer any six questions in Section 'B' and any two questions in Section 'C'.
- 2) 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 2 or 3 sentences. Answer all these questions at one place in the same order.
- 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.
- 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.
- Draw labelled diagrams wherever necessary for questions in Section 'B' and 'C'.

#### SECTION A

 $10 \times 2 = 20$ 

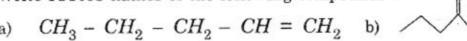
Note: Answer all questions.

- Define TLV.
- 2. Why is CO poisonous?
- 3. Write the preparation of plaster of Paris.
- 4. State the law of mass action.
- 5. What is disproportionation reaction?
- 6. Why is KO2 paramagnetic?
- Calculate the ratio of kinetic energies of 3 gms of hydrogen and 4 gms of oxygen at a given temperature.



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- 8. What are the harmful effects caused by ozone layer depletion?
- 9. Write any two uses of zeolites.
- 10. Write IUPAC names of the following compounds:



#### SECTION B

 $6 \times 4 = 24$ 

Note: Answer any six questions.

- 11. Derive Ideal gas equation.
- 12. Explain the hybridization involved in the formation of  $PCl_5$  molecule.
- 13. Balance the following redox reaction by ion-electron method. (in acidic medium)  $Cr_2O_7^{-2}{}_{(aq)} + SO_3^{-2}{}_{(aq)} \rightarrow Cr_{(aq)}^{+3} + SO_4^{-2}{}_{(aq)}$ .
- 14. Write two oxidizing and two reducing properties of  $H_2 O_2$
- 15. Explain borax bead test with a suitable example.
- 16. a) State third law of thermodynamics.
  - b) What are the " $\Delta H$ " sign conventions for exothermic and endothermic reactions?
- 17. What is hydrogen bond? Explain the different types of hydrogen bond with one example each.
- 18. Discuss the hydrolysis of the following types of salt solutions.
  - a) Salt of weak acid and strong base.
  - b) Salt of strong acid and weak base.

### SECTION C

 $2 \times 8 = 16$ 

Note: Answer any two questions.

- 19. What are the postulates of Bohr's model of hydrogen atom? Explain the various series of line spectra in hydrogen atom using Bohr's model.
- 20. Define IE<sub>1</sub> and IE<sub>2</sub>. Why is IE<sub>2</sub> > IE<sub>1</sub> for a given atom? Discuss any four factors that affect IE of an element.
- 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) Bromine

d) HBr

