

**123****III**

Total No. of Questions – 21

Regd.

Total No. of Printed Pages – 2

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**Part – III****CHEMISTRY, Paper-I**  
(English Version)

Time : 3 Hours ]

[ Max. Marks : 60

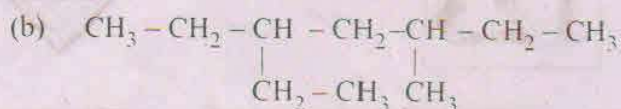
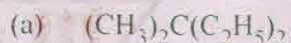
**Note :** Read the following instructions carefully :

- (1) Answer **all** the 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 **two** or **three** sentences. Answer all these questions at one place in the same order.
- (3) 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.
- (4) 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.
- (5) Draw labelled diagrams, wherever necessary for questions in Section – ‘B’ and Section – ‘C’.

**SECTION – A****10 × 2 = 20****Note :** Answer **all** questions :

1. What is Plaster of Paris ? Write its uses.
2. What Agro chemicals are responsible for water pollution ?
3. Name the common components of photo chemical smog.
4. Potassium carbonate cannot be prepared by Solvay process. Why ?
5. What is the effect of pressure on a gaseous chemical equilibrium ?
6. What are Extensive and Intensive properties ?
7. State the 3<sup>rd</sup> law of thermodynamics.
8. Calculate the amount of Carbon dioxide that could be produced when one mole of Carbon is burnt in 16 g of dioxygen.
9. Calculate the ratio of kinetic energies of 3 g of H<sub>2</sub> and 4 g of O<sub>2</sub> at a given temperature.

10. Write IUPAC names of the following compounds :



### SECTION - B

6 × 4 = 24

**Note :** Answer any six questions :

11. Deduce (a) Charles' law (b) Graham's law of diffusion from kinetic gas equation.
12. Balance the following redox reaction in basic medium by ion-electron method :



13. What is a conjugate acid-base pair ? Write the conjugate acid and conjugate base of each of the following :
  - (a)  $\text{OH}^-$
  - (b)  $\text{HCO}_3^-$
14. Explain the following with suitable examples :
  - (a) Electron deficient hydrides
  - (b) Ionic hydrides
15. Explain the structure of diborane.
16. What do you understand by
  - (a) Allotropy
  - (b) Inert pair effect
17. Describe any two methods of preparation of Ethane.
18. Write the reactions of Ethylene with the following :
  - (a) Ozone
  - (b) Cold, dilute alk.  $\text{KMnO}_4$

### SECTION - C

2 × 8 = 16

**Note :** Answer any two questions :

19.
  - (a) What are postulates of Bohr's model of Hydrogen atom ?
  - (b) State Hund's rule and Aufbau principle.
20. Write an essay on s, p, d and f-block elements.
21.
  - (a) Explain the hybridisation involved in  $\text{SF}_6$ .
  - (b) State Fajan's Rules and give suitable examples.