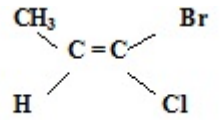
B.Sc. DEGREE EXAMINATION,APRIL 2020
I Year II Semester
General Chemistry – IV

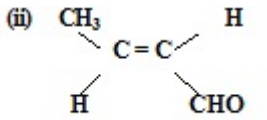
Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Predict whether 3-chlorohexane will be optically active or not. Give reason for your answer.
2. Define 'Plane of symmetry'. Give example.
3. Write the expression for Boyle's law derived from kinetic gas equation.
4. What is collision number? Write an expression for it.
5. Define vapour pressure.
6. State Trouton's law.
7. Why do alkali metals do not form bivalent cation?
8. Write any two 's' block elements which are biologically important .
9. State Bronsted-Lowry concept of acid and base.
10. Calculate the pH of 0.0001M HCl.
11. What do you mean by Reynold's number?
12. Assign E and Z configuration to the following compounds

(i) 

(ii) 

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Write the conditions for a compound to be optically active.
14. Discuss the types of molecular velocities of gases and write the relation between them.
15. Explain the types of structures observed in mesomorphic state.
16. Discuss the diagonal relationship between Li and Mg.
17. Discuss dissociation of water and derive an expression for K_w.
18. Explain the significance of (+) & (-) and D & L with the absolute configuration of glyceraldehyde.
19. How Ostwald viscometer helps in the determination of viscosity?

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Describe any two methods for distinguishing geometrical isomers.
21. (a) Explain Linde's method of liquefaction of gases.
    (b) Derive Vander waal's equation from ideal gas equation.
22. Define surface tension. How it is determined by capillary rise method ?
23. Compare the characteristics of oxides and halides of alkali and alkaline earth metals.
24. Derive an expression for (a) Dissociation of weak monobasic acid HA
    (b) Dissociation of weak monoacid base BOH.

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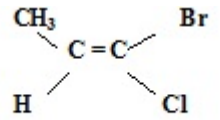
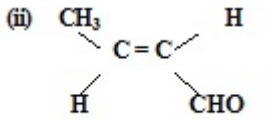
(i) 

(ii) 

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