UG–684 **BCHE–11**

B.Sc. DEGREE EXAMINATION — JUNE, 2018.

First Year

GENERAL CHEMISTRY — I

Time : 3 hours Maximum marks : 75

PART A — (3 × 5 = 15 marks)

Answer any THREE questions.

1. Write an example each for molecule containing primary carbon, secondary carbon and tertiary carbon.

2. Give the name and structure of :

   (a) any two heterocyclic compounds with one hetero atom.

   (b) any two heterocyclic compounds with two hetero atoms.

3. (a) Mention any two s-block elements with electronic configuration.

   (b) Mention any two p-block elements with electronic configuration.

4. What is octet rule? Explain with examples.

5. (a) Define ideal gas.

   (b) Write the Van der Waals equation.

PART B — (4 × 15 = 60 marks)

Answer any FOUR questions.

6. (a) Write any two rules for IUPAC nomenclature.

   (b) Give the IUPAC name for following compounds :

   (i) $CH_3 - CH_2 - CH_2 - CH_3$

   (ii) $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_2 - CH_3$

   (iii) $CH_3 - CH = CH - CH_3$

   (iv) $CH_3 - CH_2 - OH$.

7. Write a short note on the following :

   (a) inductive effect

   (b) electromeric effect

   (c) resonance effect

   (d) steric effect.

8. Give an account of the following :

   (a) atomic radii

   (b) ionic radii

   (c) ionization energy

   (d) electronegativity.

9. Briefly discuss the following with one example each.

   (a) Born-Haber cycle

   (b) Fajan's rule.

10. (a) Write the postulates of kinetic theory of gases.

    (b) Derive the kinetic equation for gases.

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