PC-11696/NH

AS/2111
CHEMISTRY-I-BTHB-1106T
(Semester–I)

Time : Three Hours]   [Maximum Marks : 74

Note : Section A and Section-B consists of 4 questions and candidates are required to attempt any *two* questions and each will carry 11 marks. Section-C consists of 15 questions each will carry 2 marks.

SECTION–A

I.   (a) What is Heisenberg's uncertainty principle ?   (5)

     (b) Explain the Vander Wall interactions.   (6)

II. (a) Explain the hyper conjugation.   (6)

     (b) What is resonance ? Explain the factors affect the resonance.   (5)

III. (a) Explain the kinetic theory of gases.   (6)

     (b) Explain the intermolecular forces.   (5)

IV. (a) Explain the differences between solids, liquids and gases.   (6)

     (b) Explain the root mean square and average and most probable velocities.   (5)

SECTION–B

V.   (a) Explain the formation of three methods of alkenes.

(6)

(b) Explain the stabilities of alkenes.   (5)

VI. (a) Explain the diamagnetism and ferromagnetism.   (6)

(b) Explain the temperature method for the measurement of dipole moment.   (5)

VII. (a) Explain the isomerism in alkenes.   (6)

(b) Explain the structure and bonding in alkynes.   (5)

VIII. (a) Explain the orientation of dipoles in an electric field.

(6)

(b) Explain the formation of alkynes.   (5)

SECTION–C

IX. (a) What is the Hund's multiplicity rule ?

(b) Explain the aromaticity in benzene.

(c) What is the difference between the bond angles and bond energy ?

(d) What are quantum number explain each ?

(e) How do you find the dipole moment of HC1 ?

(f) Explain the Joule Thomson effect.

(g) What are optical active compounds ?

(h) Give the examples of diamagnetic substances.

(i) What are the Refractive index and what is the effect of temperature ?

(j) What is ideal behaviour of gases ?

(k) Explains the different types of the inductive effect.

(l) Explain the dipole moment.

(m) What is the effect of temperature on diamagnetic behaviour.

(n) What is the non-ideal behaviour of gases.

(o) What is resonance ? $(15×2=30)$

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