PC-11703/NH

BS/2111

CHEMISTRY-3–BHB-14

(Semester–III)

Time : Three Hours] [Maximum Marks : 74

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

SECTION–A

I. (a) Explain the reduction of methods of ketones from acid chloride. (5)

(b) Explain the three methods of formation of phenols. (6)

II. (a) Out of alcohols and phenols which is more acidic and explain ? (6)

(b) Explain the carboxylation. (5)

III. (a) Explain the acidity of carboxylic acids. (6)

(b) Explain the methods of formation of aldehydes. (5)

IV. (a) Explain the effect of substitution on carboxylic acids. (6)

(b) Explain the *two* reactions of formation of 1,3-dithianes. (5)

SECTION–B

V. (a) Explain the First law of thermodynamics and its drawbacks. (6)

(b) Explain the intensive and extensive properties. (5)

VI. (a) Explain the different types of systems with examples. (6)

(b) Explain the heat capacity at constant pressure. (5)

VII. (a) Difference between state functions and path functions. (6)

(b) Derive the relationship between C_v and C_p. (5)

VIII. (a) Calculate the "q" for isothermal and adiabatic reversible process. (6)

(b) Explain the formation of chemical reaction of amides. (5)

SECTION–C

IX. (a) What is system and surroundings ?

(b) Explain the 1,3 dithianes.

(c) What is enthalpy ?

(d) What are aldehyde and ketones ?

(e) A 0.5 mole of gas at temperature 300 K expands isothermally from an initial volume of 2 L to 6 L. What is the work done by the gas ?

(f) Explain the Joule Thomson effect.

(g) What are adiabatic process ?

(h) What is the heat ?

(i) What is the inversion temperature ?

(j) What type of hydrogen bonding?

(k) Explains the Joule law.

(l) What are exothermic and endothermic reactions ?

(m) What is the condition of internal energy for a spontaneous reaction ?

(n) Give *two* examples of open system.

(o) What is value of work done in a cyclic process ?

(15×2=30)