

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch – CHEMISTRY

GENERAL CHEMISTRY – II

Time : Three Hours

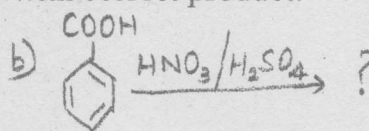
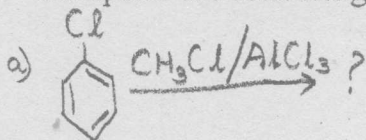
Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 2 = 20)

- 1 Give reason for diagonal relationship of Li with Mg.
- 2 How do alkaline earth metals behave as good reducing agents?
- 3 State first law of thermodynamics and give its mathematical representation.
- 4 Define isothermal and adiabatic process.
- 5 State the law of constancy of interfacial angles.
- 6 Define the terms unit cell and lattice point.
- 7 State Saytzeff rule with an example.
- 8 Why alkynes are more acidic than alkenes?
- 9 State Huckel's rule with an example.
- 10 Complete the following reactions with correct product.



SECTION - B (25 Marks)

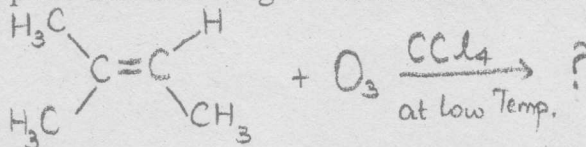
Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a Write the important minerals of Mg and explain the process involved in the extraction of Mg.
OR
- b Briefly explain the separation of noble gases by Dewar's method.
- 12 a Define heat capacity at constant volume and pressure. Derive the relationship between C_p and C_v .
OR
- b State Hess law of heat of summation and explain some of its important applications.
- 13 a State and explain the law of rational indices.
OR
- b Explain the crystal structure of KCl with neat diagram.
- 14 a Explain Hofmann elimination reaction with suitable example and mechanism.

OR

- b Complete the following reaction with suitable mechanism.



- 15 a Give a short note on the molecular picture of benzene.

OR

- b Write the mechanism of Friedel-Crafts alkylation of benzene.

SECTION - C (30 Marks)Answer any **THREE** Questions**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 a Discuss the anomalous behaviour of Lithium. (7)
- b Compare alkali metals with alkaline earth metals in terms of solubility of its salts. (3)
- 17 Derive Kirchoff's equation for the variation of enthalpy of a reaction with temperature at constant pressure and constant volume.
- 18 State law of Symmetry. Explain the various symmetry elements present in simple cubic crystals.
- 19 Write note on the following reaction with suitable mechanism.
- a) Epoxidation reaction in alkenes.
- b) Peroxide effect in electrophilic addition reactions.
- 20 What are deactivating substituents? Explain the effect of deactivating substituents on electrophilic substitution reactions.

Z-Z-Z

END