PSG COLLEGE OF ARTS & SCIENCE

(AUTONOMOUS) *I^C blO O l*

BSc DEGREE EXAMINATION MAY 2017

(Second Semester)

* . Branch- CHEMISTRY

GENERAL CHEMISTRY - II

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marksl

Answer ALL questions

ALL questions carry EQUAL marks (1 0 x 2 = 20)

1 Why do s-block elements only give colouration in a flame?

2 Why are noble gases unreactive?

3 What are intensive properties?

4 Enthalpy of neutralization of a strong acid with strong base is always constant. Why?

5 What is meant by space lattice and unit cell?

6 Calculate the interplanar spacing between the (221) plane of a cublic lattice of length 4.5 Å.

7 Give the product of the reaction of 2-pentene with ozone followed by Zn / acetic acid.

8 How will you differentiate 1-propyne from 2-butyne?

9 What are non-aromatic and anti-aromatic compounds? Give an example for each.

10 List out the characteristics of aromatic compounds.

SECTION - B (25 Marksl

Answer ALL Questions

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

11 a Bring out points of differences between Li and the other alkali metals.

OR

b Discuss the diagonal relationship between Be and Al.

12 a Show that the enthalpy of the system remains constant in an adiabatic expansion.

OR

b Calculate the values of q, w, AU and AH in an isothermal reversible expansion of a gas.

13 a What is law of symmetry? Show with the help of diagrams various planes and axes of symmetry in a simple cube.

OR

b Describe the structure of NaCl.

14 a Name and explain the mechanism of addition, of an unsymmetrical molecule over an unsaturated double bond.

OR

b What is hydroboration of alkenes? Explain with mechanism.

Cont...

15 a Give the mechanism of Friedel - Crafts acylation.

OR

b Explain the deactivating and o-p directing nature of chloro group towards electrophilic substitution reaction.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

16 a Describe the separation of noble gases by Dewar's method. (6)

b Compare the characteristics of carbonates and bicarbonates of alkali and alkaline earth metals. (4)

17 a Give various statements of first law of thermodynamics. (4)

b Derive Kirchoff s equation. (6)

18 Describe the investigation of internal structure of a solid by X-ray diffraction.

19 a Give the general methods of preparation of n-butane. (4)

b Discuss the effect of temperature on 1, 2- and 1,4- addition to conjugated diene. (6)

20 a Describe the molecular orbital structure of benzene. (5)

b State and explain the main points of Huckel's rule. How can this rule be employed to explain the aromaticity of organic compounds? (5)

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