PSG COLLEGE OF ARTS & SCIEJS CE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2017
(First Semester)

Branch - **CHEMISTRY**

GENERAL CHEMISTRY -1

Time : Three Hours   Maximum : 75 Marks

SECTION-A (20 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks   (1 0 x 2 = 20)

1   Define Hund's rule.
2   Mention any two limitations of Bohr's model of atom.
3   Define electron affinity.
4   Mention electronegativity of Mulliken's approach.
5   How is a co-ordinate bond formed?
6   State Faj an's rule.
7   Define bond energy.
8   Draw MO diagram of He_2.
9   What is meant by hybridization?
10   Define hydrogen bonding.

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a   Mention the physical significance of ψ and vp^2.
                        OR
   b Define (i) Pauli's exclusion principle (ii) Aufbau principle.

12 a Discuss atomic and ionic radii.
                        OR
    b Define electronegativity. How will you calculate electronegativity?

13 a Discuss Bom - Haber cycle calculation.
                        OR
    b   Write down the applications of lattice energy.

14 a Compare VB theory with MO theory.
       ,   * OR
    b Mention the relation between electronic configuration and molecular
       behaviour.

15 a Discuss the hybridization of methane.
                        OR
    b Discuss +1 and -I effects.

SECTION - C 130 Marks)
Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16   Write a brief note on quantum numbers.

17   Discuss modem periodic table.

18   Explain briefly the general characteristics of electrovalent compounds.

19   Draw the MO diagram for CO and NO molecules.

20   Explain hybridization and geometry of acetylene.

                    Z-Z-Z   END