PSG COLLEGE OF ARTS & SCIENCE
" (AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 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 (10 x 2 = 20)

1 State Heisenberg's uncertainty principle.
2 Write short notes on principal quantum number.
3 Define the term ionization energy.
4 State electron affinity,
5 Explain the hydrogen bonding involved in o-nitro phenol and m-nitro phenol.
6 How covalent bound in formed?
7 Define bond length.
8 Define bond energy.
9 Explain the relative stability of primary, secondary and tertiary carbonium ions.
10. Write a note on homdytic cleavage of covalent bond. ' ,

SECTION - B (25 Marks)
Ans\ver **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a State the postulates of Bohr about an atom.
OR
b Write the rules for the filling of orbitals in the ground state of an atom.

12 a Define electro negativity and discuss Mulliken electro negativity scale.
OR
b Explain atomic and ionic radii.

13 a Discuss Fajan's rule.
OR
b Discuss Bom-Haber cycle calculations.

14 a Compare Mo and VB theories.
OR
b Discuss the MO diagram of N_2.

15 a Discuss the hybridization and geometry of methane.
OR
b Discuss the hybridization and geometry of ethylene.

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

16 a Explain De Broglie's theory and drive De Broglie equation. (5)
b Explain azimuthual and magnetic quantum number. (5)

17 Discuss the modern periodic table.

18 Discuss the characteristics of electrovalent compounds.

19 a Write the postulates of VB theory,
b Discuss MO diagram of CO.

20 Explain addition, substitution and elimination reactions.