Or

(*b*) Explain e-programme for Radio active decay constant and radius of orbit.

M.Sc.—Chem-IS (403)

2019

(January)

Time : 3 hours

Full Marks : 80

Answer from **both** the Sections as per direction

The figures in the right-hand margin indicate marks

Candidates are required to answer in their own words as far as practicable

(BASIC PHYSICAL CHEMISTRY - I)

SECTION – A

1. Answer any *four* of the following : 4 × 4

(*a*) Explain relationship between finite group and its sub group.

(*b*) Explain point group.

(*c*) Explain symmetry adopted LCO.

(*d*) Explain shapes of d-orbitals.

(*e*) Explain Arithmetic assignment.

(*f*) Explain about constant and variables.

Or

2. Answer *all* questions : 2 × 8

(*a*) What is operation and symbols in C-language ?

(*b*) What is conditional statement ?

(*c*) Explain Angular momentum.

(*d*) Explain principle of super imposition.

(*e*) Explain construction of MO diagram.

(*f*) Explain LACO.

(*g*) What is orthogonality therm ?

(*h*) Explain standard reduction.

SECTION – B

Answer all the following questions : 16 × 4

3. (*a*) Construct character table for D_2, C_{2h}.

Or

(*b*) Explain Irreducible representation and symmetry classification of molecules.

4. (*a*) (*i*) Explain formation of hybrid orbitals.

(*ii*) Hybridization scheme for C_{3V}, D_{3h}.

Or

(*b*) Explain σ-bonding in octahedral complexes, symmetry adopted LCAO.

5. (*a*) Explain the energy value for the particle in three dimensional box is it quantized or not.

Or

(*b*) Explain and calculate angular momentum of simple harmonic oscillator.

6. (*a*) (*i*) Explain about Input and output.

(*ii*) Develop C-programme for evaluation of energy level.