6. Explain crystal defects in detail.

Or

Describe in detail about crystal packing.

M.Sc.-IVS—Chem (CC-510)

2017

Time : 3 hours

Full Marks : 80

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

The figures in the right-hand margin indicate marks

(ADVANCED PHYSICAL CHEMISTRY)

SECTION – A

1. Answer any *four* questions from the following : 4×4

   (*a*) State and explain Debye-Hückel onsager equation.

   (*b*) How do you explain Ion transport insolution ?

   (*c*) Write the effect of light at semiconductor solution.

   (*d*) Draw and explain Gibb's absorption isotherm.

(*e*) Write the factors affecting critical miceller concentration.

(*f*) States and explain Bragg's law.

Or

2. Answer *all* questions from the following : 2 × 8

(*a*) Define over potential.

(*b*) Define activity coefficient of an electrolyte.

(*c*) Write the applications of fuel cells.

(*d*) Define electro motive force (emf).

(*e*) Define Surface Tension. What are its units ?

(*f*) Write the cathodic and anodic reactions in an electrical cell.

(*g*) What are acidic and basic micelles ? Give examples.

(*h*) Name seven crystal systems.

SECTION – B

Answer **all** questions : 16 × 4

3. Derive electrocapillary Lipmann equation and explain its importance.

Or

State and explain Debye-Hückel limiting law. How do you verify the same ?

4. Explain various types of corrosion write about corrosion preventive methods.

Or

What are reversible electrochemical cells ? Discuss the Thermodynamics of reversible cells.

5. How do you determine surface area of solids by BET methods ?

Or

Describe the Mass action model of Micelles.