P48/P69/HSC263/HSC323/EE/20160520

Time : 3 Hours **Marks : 80**

Instructions :

1. All Questions are Compulsory.
2. Each Sub-question carry 5 marks.
3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
4. Question paper of 80 Marks, it will be converted in to your programme structure marks.

1. Solve any **four** sub-questions.

a) Fill in the blanks. 5

i) _____ is compound gas.

(a) NH_3 (b) CH_4

(c) He (d) Ar

ii) First two group's periodic table are _____ elements.

(a) s block (b) d block

(c) p block (d) f block

iii) If no thermal energy passes into or out of system are called as _____

(a) Adiabatic System (b) Open System

(c) Closed System (d) Isolated System

iv) Calcium Carbonate exists in _____ types of Crystalline form.

(a) 3 (b) 1

(c) 4 (d) 2

v) Lanthanides are placed in _____ group.

(a) 3^{rd} (b) 1^{st}

(c) 4^{th} (d) 2^{nd}

b) Match the following. 5

i)	p block elements	a)	Amorphous solid
ii)	Non metals	b)	H = E + PV
iii)	Sugar	c)	Metallocls
iv)	Plastics	d)	Electronegative
v)	Enthalpy	e)	Crystalline solids

c) State true / false. 5

i) Crystalline solids are called true solids.

ii) Oxygen is are gas.

iii) Vertical column of periodic table is called group.

iv) Polymorphous substance have different physical properties.

v) Lewis acids are electron acceptors.

d) Fill in the blanks. 5

i) According to Bronsted - Lowry theory acid is a _____ donor.

ii) A substance which promots activity of catalyst is called _____.

iii) Photosynthesis is an example of an _____ chemical reaction.

iv) Oxidation is loss of _____.

v) Those processes which take place at constant pressure are called _____ processes.

e) Define and explain the following terms. 5

i) Molarits

ii) Molality

iii) Normality

iv) Mole fraction

v) Percent by weight

2. Solve any **four** sub-questions.

a) Difference between Reversible and Irreversible process of Thermodynamics. 5

b) Explain the crystal structure in detail. 5

c) Explain polar and non polar solvent. 5

d) Explain the properties of

i) Intensive system

ii) Extensive system 5

e) Difference between Metals and Non-metals. 5

3. Solve any **four** sub-questions.

a) Define catalysis and explain types of catalysis. 5

b) Explain different symmetry of crystals. 5

c) Explain acidic and basic buffer with example. 5

d) Note on - Auto catalysis. 5

e) Define and explain. 5

i) Super saturated solution

ii) Saturated solution

iii) Sub saturated solution

4. Solve any **four** sub-questions.

a) What is meant by endothermic process and give its example. 5

b) Write note on - Hydrolysis 5

c) Define pH and pOH and show that pH + pOH = 14. 5

d) Explain Hydrocarbon gases with their application and safety precaution. 5

e) Define polymorphism give its example and use in pharmaceutical. 5

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