Scheme – G

Sample Question Paper

Course Name : Diploma in Chemical Engineering

Course Code : CH

Semester : Third **17314**

Subject Title : Chemical Process Technology-I

Marks : 100 **Time: 03 hrs**

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

Q1A) Attempt any SIX **12 Marks**

a) Write industrial Application of H_2SO_4

b) Name raw material for manufacturing of H_2SO_4 by DCDA Process.

c) Write for contact process physico chemical principle.

d) Write reaction involve in manufacturing of H_2SO_4 by DCDA Process.

e) State Le Chatlier principle for ammonia synthesis.

f) Write the use of CO_2 in carbonating tower for manufacturing of soda ash.

g) Name any four types of cement.

h) Name any two Engineering problem in manufacturing H_2SO_4

Q1B) Attempt any TWO **08 Marks**

a) Write the cell notation for diaphragm cell & mercury cell for manufacturing of caustic soda.

b) State Linde & Claudes principle for manufacturing O_2& N_2

c) Explain Hardening & settling of cement.

Q2) Attempt any TWO **16 Marks**

a) Describe manufacturing of ammonia with flow diagram.

b) Draw & describe manufacturing of phosphoric acid by wet process.

c) Explain ammonization and carbonating tower in production of soda Ash.

Q3) Attempt any FOUR **16 Marks**

a) Distinguish between yellow & red phosphorus.

b) Distinguish between electro thermal & electric arc process for manufacturing of phosphorus.

c) Compare phosphorus Tri & Penta chloride w.r.t. to raw material, uses & reaction.

d) Describe manufacturing of hydrochloric acid by salt and sulfuric acid process

e) Name raw material, reaction used in manufacturing of soda ash.

f) Draw & describe mercury cell used in manufacturing of chlorine & caustic soda

Q4) Attempt any FOUR **16 Marks**

a) Explain manufacturing of Chlorine withrespect to diapharm and mercury cell.

b) Explain manufacturing of single super phosphate.

c) Explain manufacturing of triple super phosphate.

d) Describe manufacturing of HCL by synthesis process.

e) Describe manufacturing of acetylene by calcium carbide method

f) Draw & describe manufacturing of water gas.

Q5) Attempt any TWO **16 Marks**

a) Describe manufacturing of urea by solution recycle method with flow diagram.

b) Describe manufacturing of O_2& N_2byLinde & Claudes process with flow diagram.

c) Describe manufacturing of nitric acid with flow diagram.

Q6) Attempt any FOUR **16 Marks**

a) Write two uses of hydrogen and water gas

b) Describe wet process for manufacturing of cement.

c) Describe manufacturing of ammonium phosphate.

d) Write various method of manufacturing its raw materials, reactions and uses of CO_2.

e) How will you control pollution in phosphorus industry.

f) Describe manufacturing of ammonium nitrate