

V. P. & R. P. T. P. Science College

B.Sc. (Fifth Semester)

Internal Test

Tuesday 1st October, 2013

Subject code: US05CICV02 (Heavy and Fine Inorganic Chemicals)

Industrial Chemistry Vocational

Time: 3:30 pm to 5:00 pm

Total Marks: 30

Q-1 Select right option from given in the following questions. (06)

- I Ammonia synthesis gas is passed through a filter to remove
(a) Compression oil (b) H_2S (c) N_2 (d) None of these
- II In HNO_3 manufacturing, gas passes downward with velocity design to give a contact time of about?
(a) $2.5 \times 10^{-3} \text{sec}$ (b) $2.5 \times 10^{-4} \text{sec}$ (c) $2.0 \times 10^{-4} \text{sec}$ (d) $2.5 \times 10^{-2} \text{sec}$
- III After blending, iodized salt will contain 0.01% of?
(a) Sodium thiosulfate (b) Sodium carbonate (c) Potassium iodide (d) None of these
- IV In NaCl manufacturing, at which concentration calcium sulfate completely precipitates out by solar evaporation?
(a) $25^\circ Be$ (b) $20^\circ Be$ (c) $27^\circ Be$ (d) $13.5^\circ Be$
- V About which temperature sodium borohydrate is manufactured from sodium hydride and trimethyl borate in a mineral oil medium?
(a) $280^\circ C$ (b) $260^\circ C$ (c) $275^\circ C$ (d) $280^\circ C$
- VI In which solvent, sodium methoxide is soluble?
(a) CH_3OH (b) DMF (c) $CHCl_3$ (d) H_2O

Q-2 Answer any three of the following: (06)

- I Enlist the raw materials required for manufacture of superphosphate
- II Enlist the raw materials required for manufacture of Triple superphosphate
- III Define catalyst and give any two example of catalyst
- IV Enlist the raw material various methods used for sodium chloride manufacturing
- V Enlist various methods for preparation of sodium carbonate
- VI Write preparation Fehling solution No.1

Q-3 Enlist various methods of manufacture of phosphoric acid. With the help of flow diagram (06)
explain any one method for manufacture of phosphoric acid in detail.

OR

Q-3 With the help of flow diagram explain the manufacture of gypsum. (06)

Q-4 With the help of flow diagram explain the manufacture of sodium sulfate from salt and sulfuric acid (06)

OR

Q-4 Write a short note on titanium tetrachloride. (06)

Q-5 With the help of flow diagram explain the manufacture of oxalic acid. (06)

OR

Q-5 Explain the steps ammoniation of brine and carbonation steps of solvay's ammonia soda (06)
process with neat diagram for manufacture of soda ash.

