

SEAT No. _____

No. of Printed Pages : 2

[76]

Sardar Patel University

B. Sc. (Semester – V) Examination

Date: 26-12-2020, Saturday

Time: 02:00pm – 04:00pm

Industrial Chemistry Vocational

COURSE NO: US05CICV02 (Heavy & Fine Inorganic Chemicals)

Notes: Figures to the right indicate full marks.

Total marks: 70

Q.1 Answer the following Multiple-Choice Questions. (All are compulsory) (10)

- Ammonia synthesis gas is passed through a filter to remove
A. Compression oil
B. H₂S
C. N₂
D. None of these
- In HNO₃ manufacturing, gas passes downward with velocity design to give a contact time of about?
A. 2.5 x 10⁻³sec
B. 2.5 x 10⁻⁴sec
C. 2.0 x 10⁻⁴sec
D. 2.5 x 10⁻²sec
- In yellow phosphorous manufacturing, the furnace gases pass into coolers where the vapors are liquefied and separated from the?
A. CO₂
B. NH₃
C. CO
D. None of these
- In Fluorine manufacturing at which temperature cells are operated?
A. 105^oC-110^oC
B. 90^oC-95^oC
C. 80^oC-90^oC
D. 95^oC-105^oC
- In bromine manufacturing, with which gas acid solution is treated, which re-oxidizes the bromine back to free bromine?
A. Hydrogen
B. Chlorine
C. Fluorine
D. Carbon dioxide
- The brine is first aerated to remove most of?
A. Hydrogen sulfide
B. Carbon dioxide
C. Chlorine
D. None of these
- An adduct chromium trioxide and pyridine is known as?
A. Chromyl chloride
B. Jones reagent
C. Collins reagent
D. None of these
- The conjugated base of oxalic acid is known as _____.
A. Dicarboxylic acid
B. Oxalyl chloride
C. Oxalate
D. None of these
- Which column packing most widely used for adsorption chromatography?
A. Starch
B. Aluminum oxide
C. Inulin
D. Calcium carbonate
- Ninhydrin is used for detecting?
A. Ammonia
B. Phenol
C. Protein
D. None of these

[4]

[P.T.O.]

Q.2 Are the following statements true or false? (All are compulsory) (08)

1. Ammonia synthesis gas is passed through a filter to remove H₂S Gas. True / False?
2. Arsenic is removed from the crude phosphoric acid by the action of CO₂ gas. True / False?
3. In Fluorine manufacturing 105 °C-110 °C temperature of cells are operated. True / False?
4. In bromine manufacturing, "Hydrogen" gas acid solution is treated in the process. True / False?
5. Dehydration of perchloric acid produce "Chlorous acid". True / False?
6. The conjugated base of oxalic acid is known as "Dicarboxylic acid". True / False?
7. Ninhydrin is used for detecting "Phenol". True / False?
8. Molecular formula of 1,2-naphthaquinone is "C₁₁H₆O₂". True / False?

Q.3 Answer the following short questions (Attempt Any 10 out of 12) (20)

1. Give raw materials required for manufacture of superphosphate.
2. Enlist uses of Triple superphosphate.
3. Write uses of Ammonia.
4. Define term "Catalyst".
5. Write the name of any four-industrial catalyst
6. Give uses of Sodium thiosulphate.
7. Write properties of sodium borohydride
8. Write the uses of "Oxalic acid".
9. Give methods for manufacturing soda ash.
10. Write properties of Methanol.
11. Enlist various solvents used in HPLC
12. What is "Nujol"?

Q.4 Answer the following Long questions (Attempt Any 04) (32)

1. Write a note on Phosphoric acid.
2. Write a detail note on Ammonia, its manufacturing, properties and uses.
3. Discuss in detail about Nickel and Sodium thiosulphate.
4. Write a note on Sodium sulphate.
5. With the help of flow diagram, explain the manufacture of Lithium aluminium hydride.
6. Explain the Solvay's ammonia soda process.
7. With the help of flow diagram, explain the manufacture of Chloroform and Carbon tetrachloride.
8. Write note on "Bio chemical reagents".

————— X —————