

[130]

SEAT No. _____



No. of Printed Pages: 2

**SARDAR PATEL UNIVERSITY
EXTERNAL EXAMINATION**

B.Sc. INDUSTRIAL CHEMISTRY VOCATIONAL (5th -SEMESTER)

US05CICV23: (Heavy & Fine Chemicals)

Thursday, 25th November, 2021

Time: 3:00 pm to 5:00 pm

Total Marks: 70

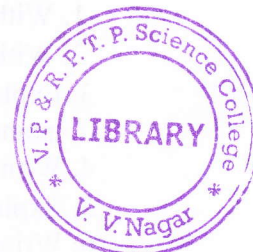
Note: Figures to the right indicate full marks.

Q.1 Answer the given multiple choice questions. (All are compulsory) [10]

1. Ammonia synthesis gas is passed through a filter to remove _____.
(a) Compression oil (b) H₂S (c) N₂ (d) None of these
2. Phosphoric acid is prepared from _____.
(a) Chalcopyrite (b) Cryolite (c) Rock phosphate (d) None of these
3. Any contact of _____ with calcium carbide results in the production of acetylene.
(a) CO₂ (b) NaOH (c) H₂O (d) All of these
4. Which product is obtained during oxidation of ethanol?
(a) Acetaldehyde (b) Formaldehyde
(c) Formic acid (d) None of these
5. Which column packing most widely used for adsorption chromatography.
(a) Starch (b) Aluminium oxide
(c) Calcium carbonate (d) None of these
6. In Solvay process, where purified brine is pumped?
(a) CO absorber tower (b) H₂O absorber tower
(c) NH₃ absorber tower (d) Carbonation tower
7. The catalytic dehydrogenation of isopropyl alcohol gives _____.
(a) Vinyl acetate (b) Propagyl alcohol
(c) Acetaldehyde (d) Acetone
8. In commercial production of resorcinol _____ use as the main feed stock.
(a) Phenol (b) Benzene (c) Cumene (d) All of these
9. Which catalyst is used in the manufacturing of carbon tetrachloride?
(a) Copper (b) iron boarings
(c) Platinum (d) Aluminum
10. The carbon tetrachloride is removed from the sulfur by _____.
(a) Distillation (b) Evaporation
(c) Extraction (d) None of these

Q.2 Are the following statements TRUE or FALSE? (All are compulsory) [08]

1. Triple superphosphate is a much more concentrated fertilizer than ordinary Superphosphate. – TRUE/FALSE?
2. Ammonium sulphate containing 21% nitrogen. – TRUE/FALSE?
3. Slaked lime is also known as quick lime. – TRUE/FALSE?
4. Potassium bromide is white crystalline powder and freely soluble in water. – TRUE/FALSE?

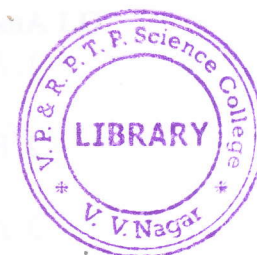


5. Pyridine is an excellent solvent, especially for dehydrochlorination reactions and extraction of antibiotics. – TRUE/FALSE?
6. Melamine can be synthesized from urea at 320 to 400°C. – TRUE/FALSE?
7. Dimethyl sulfoxide (DMSO) is a colorless, odorless, strongly hygroscopic liquid. – TRUE/FALSE?
8. 2-Pyrrolidone is transported in steel drums. – TRUE/FALSE?

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

[20]

1. Enlist various raw materials used for manufacturing sodium sulfate.
2. Write down the properties of ammonium sulfate.
3. Enlist the raw materials required for manufacture of superphosphate.
4. Write properties and uses of perchloric acid.
5. Give properties and uses of sodium borohydride.
6. Write uses of oxalic acid.
7. Write the uses of Phenol.
8. Write the properties of acetylene.
9. Write the reaction for manufacturing of alkyl amines from alcohol and ammonia
10. Write the uses of Methyl chloride.
11. Write the physical properties of DMF.
12. Write the chemical properties of Di-butyl ether.



Q.4 Answer the following Long questions (Attempt any 4 out of 8)

[32]

1. With the help of flow diagram explain the manufacturing of Ammonia.
2. With the help of flow diagram explain the manufacturing of lime.
3. Explain the Solvay's ammonia soda process with neat flow diagram for manufacturing of soda ash.
4. With the help of flow diagram explain the manufacturing of chloroform.
5. Explain the manufacturing of Phenol by cumene process with suitable flow diagram.
6. Write short note on alkyl phosphates
7. With the help of flow diagram explain manufacturing of Methyl chloride.
8. Write note on THF