SEAT No._____ No. of Printed Pages: 2

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Sardar Patel University

B. Sc. (Semester – III) Examination

Date: 01-01-2021, Friday Time: 02:00 – 04:00

Industrial Chemistry

COURSE NO: US03CICH01 – Heavy and Fine Chemicals

Notes: Figures to the right indicate full marks. Total marks: 70

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

1. Molecular weight of H2SO4 in.....gm/mole.
   a) 96.0 c) 92.8
   b) 98.08 d) 100
2. H2SO4 have specific gravity.....
   a) 1.6254 c) 1.8356
   b) 1.0286 d) 1.352
3. The super saturated in water is called as ....
   a) Oleum c) H2SO4
   b) HNO3 d) HCl
4. NaOCl is strong ____ agent.
   a) Oxidizing c) Bleaching
   b) Reducing d) None of these
5. The soda ash has chemical formula.....
   a) Na2CO3 c) NaHCO3
   b) NaCl d) NaOH
6. The raw material for NaOH manufacture of .....
   a) Na2CO3 c) NaHCO3
   b) CaCO3 d) None of these
7. The melting point of magnesium is _____ ^{0}C
   a) 651 c) 750
   b) 500 d) 800
8. Electrolysis of 50% aqueous H2SO4 yield into
   a) H_2O_2 c) H_2gas
   b) O2gas d) None of these
9. The boiling point of THF is _____ ^{0}C
   a) 66 c) 96
   b) 78 d) None of these
10. 1,4-Dioxane is a six membered_____
    a) Cyclic diether c) Ketone
    b) Ester d) Alcohol

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

1. Most of nitrogen containing fertilizers are made from HNO_3.
2. Burning of chlorine gas in hydrogen yields hydrochloric acid.
3. The soda ash is manufactured by Solvay's ammonia process.
4. Diaphragm cell is used for manufacture of NaHCO3.
5. Resistance electric furnaces are used for the raw material having Very high thermal resistance.
6. Abrasive's are the material having very high resistance.
7. The chemical formula of tetrahydrofuran is $(C_2H_5)_2O$.
8. Acid catalyst used in manufacture of Dioxane from diethylene glycol.

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

1. Write a properties Nitrogen.
2. Write an industrial uses of Sulphur dioxide.
3. Write a properties and uses of Carbon dioxide
4. Write sources and preparation of Sodium chloride.
5. Write a properties and uses of Sodium bicarbonate.
6. Enlist a various properties and uses of Sodium hypochlorite.
7. Enlist a different uses of Boron carbide.
8. Give properties of Synthetic graphite.
9. Write a different uses of Potassium permanganate.
10. Write a properties and uses of Diethyl ether.
11. Define term "Specialty industrial solvents".
12. Write a properties and uses of Dimethyl sulfoxide.

Q.4 Answer the following Long questions (Attempt Any 04 out of 08) (32)

1. Write a note on manufacturing process for Phosphoric acid.
2. Write a note on manufacturing process for HCl.
3. Discuss the manufacturing process of NaOH.
4. Discuss the manufacturing process of Sodium carbonate.
5. Discuss the manufacture process of Silicon carbide.
6. Write a note on Electro thermal industries.
7. Write a note on THF.
8. Write a note on Diethyl ether and DMSO.