

SEAT No. \_\_\_\_\_

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[99]

SARDAR PATEL UNIVERSITY

Chemical process industries

T.Y.B.Sc. SEMESTER – V (Industrial Chemistry)

EXAMINATION -2020

SUB CODE: US05CICH23

DATE: 28/12/2020

TIME: 2.00 P.M to 4.00 P.M

DAY: Monday

TOTAL MARKS: 70

Q. 1 Choose the correct answer.

[10]

- Which catalyst is used widely in manufacture of ammonia?  
(a) Fe (b) Al (c) Si (d) Zr
- Which inorganic chemical cause reduction in ozone layer?  
(a) Iodine (b) Fluorine (c) Fluorocarbons (d) None of these
- Which of the following is the formula of calcium ammonium nitrate?  
(a)  $5\text{Ca}(\text{NO}_3)_2 \text{NH}_4\text{NP}_3$  (c)  $4\text{Ca}(\text{NO}_3)_2 \text{NH}_3\text{NP}_3$   
(b)  $5\text{Ca}(\text{NO}_3)_2 \text{NH}_3\text{NP}_3$  (d)  $5\text{Ca}(\text{NO}_3)_2 \text{NH}_3\text{NP}_3$
- Electro thermal industries use electricity as a source of \_\_\_\_\_  
(a) Light (b) Heat (c) radiation (d) Conduction
- Resistance electric furnaces are used for the raw material having \_\_\_\_\_  
(a) Low thermal resistance (b) Very high thermal resistance  
(c) Sublimed matters (d) None of these
- The common salt has chemical formula \_\_\_\_\_  
(a)  $\text{Na}_2\text{CO}_3$  (b)  $\text{NaHCO}_3$  (c)  $\text{NaCl}$  (d)  $\text{NaOH}$
- The caustic soda has the chemical formula \_\_\_\_\_  
(a)  $\text{Na}_2\text{CO}_3$  (b)  $\text{NaHCO}_3$  (c)  $\text{NaCl}$  (d)  $\text{NaOH}$
- Diaphragm cell is used for manufacture of \_\_\_\_\_  
(a)  $\text{Na}_2\text{CO}_3$  (b)  $\text{NaHCO}_3$  (c)  $\text{NaCl}$  (d)  $\text{NaOH}$
- In wet process production of Phosphoric acid the reaction time range is \_\_\_\_\_  
(a) 1.5 to 12h (b) 1.5 to 10h (c) 1.5 to 2h (d) None of these.
- Phosphorus oxidized to  $\text{P}_2\text{O}_5$  by \_\_\_\_\_  
(a) Electric furnace (b) Wet process (c) a & b both (d) None of these.



[1]

(P.T.O.)

**Q.2 Fill in the Blanks and True-False.**

[08]

1. Ammonia is the most important source of \_\_\_\_\_
2. Iodine used as a catalyst in the chlorination of organic compound. (True/False)
3. Pure hydrogen manufacturing by electrolysis of water. (True/False)
4. Brine electrolysis is carried out with an anode current density of  $0.07 \text{ amp/cm}^2$  (True/False)
5. The temperature require for  $\text{CaC}_2$  manufacture is \_\_\_\_\_ $^{\circ}\text{C}$ .
6. Acetylene gas can be produced by the reaction of water with \_\_\_\_\_.
7. Rock phosphate can be solubilized sulfuric acid. (True/False)
8. Triple superphosphate is made by action of phosphoric acid on phosphate rock (True/False)

**Q.3 Answer the following.(attempt any 10 out of 12)**

[20]

1. Write Uses of Ammonia.
2. Write the action of Urea as fertilizer.
3. Give the uses of iodine.
4. Write about ammonium Sulphate in brief.
5. Write the use of Hydrogen.
6. What is the different electrolyte cells used in manufacturing of NaOH?
7. Write the advantage of electric furnace.
8. Give the sources of magnesium metal.
9. Give the use of hydrogen peroxide.
10. Enlist the raw materials required for manufacture of Triple superphosphate.
11. Give the rawmaterial for manufacture of superphosphate.
12. Write the by-product from phosphorus manufacturing process.



**Q4. Long Answer Question (Attempt any 4 out of 8)**

[32]

1. Write the manufacturing process of Urea.
2. Write a note on ammonium sulphate.
3. Write the manufacture processes of NaOH using Diaphragm Cell.
4. Explain in detail about manufacture process of Hydrogen.
5. Explain the classification of electric furnaces in detail.
6. With the suitable diagram explain calcium carbide manufacture.
7. Write a note on Wet-process of Phosphoric acid.
8. Write about Mono-Ammonium phosphate.

X  
[2]