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SARDAR PATEL UNIVERSITY
B.Sc. (SEMESTER-5) EXAMINATION- 2022

US05CICV22: (Technology of Petroleum & Petroleum Products)

Date : 11/11/2022, Friday

Time : 10:00 A.M. TO 01:00 P.M.

Total Marks: 70

Q.1 Multiple Choice Questions. (All are compulsory) [10]

1. Calcium Carbide undergoes hydrolysis with two molecules of water produces _____.
(a) $C_2H_2 + Ca(OH)_3$ (b) $C_2H_6 + Ca(OH)_2$
(c) $C_2H_4 + Ca(OH)_2$ (d) $C_2H_2 + Ca(OH)_2$
2. Olefinic hydrocarbon of Petroleum tends for _____.
(a) Saturated Hydrocarbon (b) Unsaturated Hydrocarbons
(c) Aromatic Hydrocarbons (d) Naphthenes Hydrocarbons
3. Method used for determination of carbon residue _____.
(a) Rams bottom Carbon Residue (b) Conradson Carbon Residue
(c) Both (a & b) (d) None
4. The catalyst used for manufacturing of CS_2 is _____.
(a) Activated Alumina (b) H_2 / Raney-Ni
(c) Silica- SO_3H (d) Pt-Rh Alloy.
5. Which of the following product is not obtained from C_3 Fraction of Petroleum?
(a) Isopropanol (b) Cumene (c) Hydrogen Cyanide (d) All of these
6. Which of the following product obtained from $C1$ Fraction of Petroleum?
(a) CH_3OH (b) CS_2 (c) HCN (d) All of these
7. The best catalyst for Direct Hydration of Ethylene is _____.
(a) H_3PO_4 on Diatomaceous Earth (b) Ni
(c) Cd (d) Pd
8. Oxinide fertilizers can be prepared from _____.
(a) Hydrogen Cynide (b) Cumene (c) Isopropanol (d) Prppylene
9. Which of the following parameter is to be considered during Selection of Catalyst?
(a) Selectivity (b) Activity (c) Ageing (d) All of these
10. The function of splitter is _____.
(a) Gas Separation (b) Liquid Separation
(c) Solid Separation (d) None of these

Q.2 Short Answer Questions. (Attempt any 10 out of 12) [20]

1. Define the term Cloud Point.
2. What is petroleum?
3. Define the term Aniline point.
4. Write properties of HCN .
5. Write the uses of Methanol.

6. Enlist the chemicals derived from Acetylene.
7. Write the uses of Carbon Disulphide.
8. Write structure & raw material for the production of glycerin.
9. Write the structure and enlist raw material used the production of Ethanol.
10. Write the name of any two catalysts used in petroleum cracking.
11. Define the term selectivity for catalyst.
12. Define the term ageing for catalyst.

Q.3 Answer the given questions [10]

- A. Define the term viscosity of Petroleum and explain the measurement of Viscosity of Petroleum.
- B. Write note on theory of Petroleum formation.

OR

- A. Write a note on rectification process of petroleum.
- B. Discuss about composition of petroleum.

Q.4 Answer the given questions [10]

- A. Describe the chemicals derived from Ethylene.
- B. Write a note on manufacturing of HCN from methane with neat and clean Process flow diagram.

OR

- A. Describe the manufacturing of CS₂ with neat and clean Process flow diagram.
- B. Write a note on chemicals derived from Methane.

OR

Q.5 Answer the given questions [10]

- A. Describe the manufacturing of Vinyl acetate from Acetic acid with neat and clean Process flow diagram.
- B. Write a note on manufacturing of Styrene from ethylene with neat and clean Process flow diagram.

OR

- A. Explain the manufacturing of Cumene from propylene with diagram.
- B. Explain the manufacturing of ethanol from ethylene with diagram.

Q.6 Answer the given questions [10]

- A. Describe the manufacturing of Linear Alkyl Benzene Sulphonates (LABS) with neat and clean diagram.
- B. Explain the manufacturing of Butadiene with neat and clean Process flow diagram.

OR

- A. Write a note on manufacturing of BTX.
- B. Explain the manufacturing of butene by dehydrogenation of butane.

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