

- Q.31 Discuss the methods employed in the purification of petroleum products, highlighting the importance and challenges associated with this process.
- Q.32 Discuss the major petrochemicals derived from petroleum products and their industrial applications.
- Q.33 Discuss the manufacturing process of butanol, including the synthesis routes, catalyst selection, and process parameters.
- Q.34 Discuss the major engineering problems encountered in the manufacture of acetone, such as by product formation, energy efficiency, and solvent recycling.
- Q.35 Define petrochemicals and elaborate on the raw materials used in their production.

#### Section-D

**Note: Long answer questions. Attempt any two question out of three Questions. (2x10=20)**

- Q.36 Discuss the manufacturing processes involved in producing Ethanol, including the raw materials, reaction mechanisms, and catalysts used.
- Q.37 Describe the manufacturing process of vinyl chloride, highlighting the chemical reactions involved, raw material selection, and process conditions.
- Q.38 Write short note on any three:-
- Aromatic compound
  - Classify petrochemical
  - Butanol
  - Transportation of crude oil

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### 5th Sem., Branch : P & P Subject : Petroleum Refining & Petrochemicals

Time : 3 Hrs.

M.M. : 100

#### SECTION-A

**Note: Multiple type Questions. All Questions are compulsory. (10x1=10)**

- Q.1 What is the primary purpose of the purification of petroleum products?
- To increase viscosity
  - To remove impurities
  - To enhance color
  - To reduce boiling point
- Q.2 Which petrochemicals is commonly used as a feedstock for the production of plastics?
- Ethanol
  - Methanol
  - Ethylene
  - Butanol
- Q.3 Which process is used for Petroleum refining?
- Crystallization
  - Fractional distillation
  - Decantation
  - Sublimation
- Q.4 Which functional group is present in the compound  $\text{CH}_3\text{COOH}$ ?
- Alcohol
  - Aldehyde
  - Carboxylic acid
  - Ketone
- Q.5 Methanol is produced by the catalytic oxidation of which compound?
- Methane
  - Ethane
  - Propane
  - Butane

- Q.6 Acetone is commonly used as a solvent in which industry?  
 a) Pharmaceutical                      b) Paints & coatings  
 c) Textile                                      d) All of the above
- Q.7 Phenol is \_\_\_\_\_ type of compound?  
 a) Alkane                                      b) Alkene  
 c) Alkyne                                      d) Aromatic compound
- Q.8 What is the primary used of Toluene?  
 a) Feedstock for explosives  
 b) Solvent  
 c) Flavoring agent  
 d) Antioxidant
- Q.9 Which compound is primarily used as a precursor for synthetic rubber?  
 a) Butanol                                      b) Butadiene  
 c) Butanal                                      d) Butene
- Q.10 The chemical composition of carbon in petroleum is  
 a) 10.0 to 14.0 %                      b) 83.0 to 87.0%  
 c) 0.05 to 6.0%                      d) 0.1 to 2.0%

### Section-B

**Note: Objective type questions. All questions are compulsory. (10x1=10)**

- Q.11 Name any two properties of Petroleum?  
 Q.12 Write the one use of Methanol.  
 Q.13 Give example of C3 compound?  
 Q.14 Write full form of CNG?  
 Q.15 Write one application of petrochemical?  
 Q.16 Write formula of API gravity.

- Q.17 Name any one refinery in India.  
 Q.18 Which functional group is present in a butanol molecule?  
 Q.19 Write IUPAC name of ketone.  
 Q.20 Write one uses of diesel.

### Section-C

**Note: Short answer type Question. Attempt any twelve questions out of fifteen Questions. (12x5=60)**

- Q.21 Provide examples and systematically name each compound type according to IUPAC rules.  
 Q.22 Explain the manufacturing about methanol with its formula and its properties.  
 Q.23 Illustrate a flow sheet of a petroleum refinery and explain the uses of various refinery products.  
 Q.24 Provide a detailed explanation of the fractional distillation process of crude oil, including the products obtained and their respective boiling ranges.  
 Q.25 Explain the principles of IUPAC naming for various organic compounds, including alkanes, alkenes and aromatic compounds.  
 Q.26 Discuss about major petrochemical from petroleum products.  
 Q.27 Explain about manufacturing of phenol.  
 Q.28 Difference between C2 and C3 compound.  
 Q.29 Write about pretreatment of Petroleum.  
 Q.30 Describe the composition of petroleum and classify it based on its properties.