

- Q.30 Differentiate between thermal and catalytic cracking in the refining process and provide examples of products obtained from each.
- Q.31 Discuss the production of ammonium nitrate, focusing on its use in both fertilizers and explosives. Highlight the safety considerations associated with ammonium nitrate manufacturing and storage.
- Q.32 Explain the concept of cold process polymerization and its advantages. How does hot sulfuric acid polymerization differ from other polymerization methods.
- Q.33 Discussion details the visbreaking process
- Q.34 Write a brief overview of the key steps involved in the manufacturing of cement.
- Q.35 Discuss in detailed overview of manufacturing process of Single Super Phosphate (SSP) fertilizer, including the raw materials used, reactions involved, and the role of sulfuric acid in the process.

#### SECTION-D

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

- Q.36 Describe about the simplified flow sheet of the sugar manufacturing process and briefly explain each major step involved.
- Q.37 What is fertilizer. Explain the manufacturing of Ammonia clean flow sheet process and also explain major engg problem.
- Q.38 Write short note on any three:-
- |                   |              |
|-------------------|--------------|
| a) Reforming      | b) Bleaching |
| c) Uses of cement | d) Crude oil |

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**4th Sem / P & P**

**Subject:- Process Industries**

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Urea is a common nitrogenous fertilizer. What is its primary source of nitrogen?
- |                       |                   |
|-----------------------|-------------------|
| a) Ammonia            | b) Phosphate rock |
| c) Potassium chloride | d) Nitric acid    |
- Q.2 Which process is used to separate different components of petroleum based on their boiling points?
- |                 |                |
|-----------------|----------------|
| a) Distillation | b) Filtration  |
| c) Evaporation  | d) Sublimation |
- Q.3 What is the primary ingredient in cement production?
- |             |              |
|-------------|--------------|
| a) Iron ore | b) Sand      |
| c) Gypsum   | d) Limestone |
- Q.4 What is the process of extracting sugar from sugarcane or sugar beet called?
- |               |                 |
|---------------|-----------------|
| a) Refining   | b) Distillation |
| c) Filtration | d) Extraction   |
- Q.5 SSP (Single Superphosphate) is a fertilizer containing which essential nutrient.
- |              |               |
|--------------|---------------|
| a) Nitrogen  | b) Phosphorus |
| c) Potassium | d) Calcium    |

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- Q.6 Which term refers to the maximum temperature at which petroleum vapors can be ignited when exposed to an open flame?
- a) Boiling point                      b) Melting point  
c) Flash point                        d) Ignition point
- Q.7 The process of converting sugar cane juice into raw sugar involves which of the following processes?
- a) Fermentation                      b) Distillation  
c) Evaporation                        d) Polymerization
- Q.8 What is the process of converting heavy hydrocarbons into lighter ones by breaking chemical bonds?
- a) Distillation                        b) Hydrogenation  
c) Cracking                            d) Polymerization
- Q.9 DAP (Diammonium Phosphate) is a fertilizer that provides which two essential nutrients?
- a) Nitrogen and phosphorus  
b) Phosphorus and potassium  
c) Nitrogen and potassium  
d) Nitrogen and calcium
- Q.10 What is the primary hydrocarbon compound found in petroleum?
- a) Ethanol                              b) Methane  
c) Propane                              d) Butane

### SECTION-B

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

- Q.11 Name three common micronutrients used in agriculture.
- Q.12 What is molasses?

- Q.13 What is fire point?
- Q.14 Define Crystallization?
- Q.15 What is the definition of cement in construction?
- Q.16 Write formula of API gravity.
- Q.17 Write full form of ASTM
- Q.18 Define Petroleum?
- Q.19 Define Viscosity.
- Q.20 Can you name anyone of the major cement industries operating in India?

### SECTION-C

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

- Q.21 Explain the dewaxing process in petroleum refining. Why is it important, and what products benefit from this process?
- Q.22 What are micronutrient in the context of plant nutrition, and why are they essential for healthy plant growth?
- Q.23 What are the main raw materials and composition used in the production process of portland cement?
- Q.24 Difference between ADU and VDU?
- Q.25 Difference between dehydration and desalting.
- Q.26 Describe the settling process in sugar production and its role in separating impurities from juice.
- Q.27 Write a list of major petroleum refineries in India along with their locations and refining capacities Highlight any specific characteristics or specialties of these refineries.
- Q.28 Write about composition & classification of Petroleum.
- Q.29 Write properties and uses of UREA.