

Q.22 Explain the density, specific gravity and API gravity of Petroleum.

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### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 With neat and clean flow sheet, explain the manufacturing of Urea with the chemical reactions, raw materials, and Process description.

Q.24 Explain the production of sugar with neat and clean flow sheet with process description, advantages and disadvantages.

Q.25 Write short on any three:-

1. Petroleum
2. Viscosity
3. Nitrogen Fertilizer
4. white cement

(40)

(4)

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### 3rd Year / Chemical (Pulp & Paper) Subject : Process Industries

Time : 3 Hrs.

M.M. : 60

### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 What is the final step in the sugar manufacturing process ?

- a) Filtration                  b) Crystallization  
c) Clarification              d) Drying

Q.2 What does the term "pour point" indicate about a petroleum product?

- a) Maximum viscosity  
b) Lowest temperature at which it will flow  
c) Flash point  
d) Boiling point

Q.3 What is the main component of crude oil?

- a) water                      b) Hydrocarbons  
c) Sulfur                      d) Nitrogen

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- Q.4 Which of the following is an essential property of cement?
- High thermal conductivity
  - Compressive strength
  - All of above
  - None of above
- Q.5 Which of the following fertilizers is primarily used to supply potassium?
- Urea
  - Ammonium sulfate
  - Potassium chloride
  - Triple superphosphate
- Q.6 What is the process of removing sulfur from petroleum products called?
- Hydrocracking
  - Desulfurization
  - Distillation
  - Reforming

### SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory.  $(6 \times 1 = 6)$

- Q.7 Write the formula for Density.
- Q.8 Write the name of two industries of cement.
- Q.9 Define octane number

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- Q.10 Write full form of DA?
- Q.11 Define Dehydration?
- Q.12 Super phosphate is created by treating rock phosphate with \_\_\_\_\_ acid.

### SECTION-C

- Note:** Short answer type questions. Attempt any eight questions out of ten questions.  $(8 \times 4 = 32)$
- Q.13 Difference between Pour point and Cloud point?
- Q.14 Explain the manufacturing of ammonia with flow sheet.
- Q.15 Explain the concept of Crystallization with diagram.
- Q.16 Discuss about the manufacturing of cement with flow sheet and process description.
- Q.17 Discuss in detailed ADU and VDU in petroleum refining.
- Q.18 Explain about the Significance of Macronutrients and micronutrient
- Q.19 Discuss about the polymerization its type.
- Q.20 Write the difference between sedimentation and setting process.
- Q.21 Describe about the composition and classification of Petroleum.

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