

- Q.26 Discuss about the various types of paper products.
- Q.27 Describe the manufacturing of sugar from sugar cane.
- Q.28 Draw flow sheet of manufacturing process of starch by maize.
- Q.29 Explain manufacturing process of beer.
- Q.30 Explain major engineering problems encountered during manufacturing of Portland cement.
- Q.31 Write a note on NPK fertilizers.
- Q.32 Discuss about the method of extracting vegetables oils by mechanical extraction.
- Q.33 Describe the manufacture of urea.
- Q.34 Discuss about the triple super phosphate process.
- Q.35 Discuss about the different types of cement.

SECTION-D

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

- Q.36 Explain the method of extracting vegetable oils by solvent extraction with neat and clean flow sheet.
- Q.37 With flow sheet, describe the manufactures of ethanol by fermentation of molasses and the engineering problems associated with it.
- Q.38 Explain contact process in detail with the help of a flow sheet. Also mention major engineering problem encountered in contact process.

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4th Sem / Chemical Engg.

Subject : Chemical Technology

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

- Q.1 Contact process used for manufacturing of _____.
- a) Sulphuric acid b) Nitric acid
- c) Hydrochloride acid d) None of these
- Q.2 Vegetable oils and fats basically differ in their _____.
- a) Density ranges
- b) Physical state
- c) Chemical composition
- d) Chemical properties
- Q.3 Nitrogen content of urea is about _____ percent.
- a) 10 b) 46
- c) 80 d) 94
- Q.4 Oleum may be represented by the formula
- A) H_2SO_4 b) H_2SO_3
- C) $\text{H}_2\text{S}_2\text{O}_6$ d) $\text{H}_2\text{S}_2\text{O}_7$
- Q.5 Urea is a
- a) Nitrogenous fertiliser
- b) Potassic fertiliser

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- c) Phosphatic fertiliser
d) None of these
- Q.6 Soda ash is also called
a) Sodium carbonate b) Sodium hydroxide
c) Sodium bicarbonate d) Sodium oxide
- Q.7 Gypsum is added to clinker during cement manufacture to _____.
a) Decrease the rate of setting of cement
b) Make the cement impervious
c) Bind the particles of calcium silicate
d) To facilitate the formation of colloidal gel
- Q.8 The chemical name of bleaching powder is _____.
a) Calcium hypochlorite
b) Calcium chlorate
c) Calcium perchlorate
d) Calcium chloro hypochlorite
- Q.9 Which of the following tells the amount of free fatty acids present in fat or oil?
a) Acid number
b) Iodine number
c) Saponification number
d) Richert-Meissl number
- Q.10 Alcohol is produced by _____.
a) Oxidation of an aldehyde
b) Hydrolysis of an ether
c) Specification of a fat
d) None of these

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SECTION-B

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

- Q.11 Write the name of a method used in chemical process industries for extraction of oil from seeds.
- Q.12 Reaction of phosphate rock with 98% H_2SO_4 produces _____.
Q.13 Chemical formula of metaphosphoric acid is _____.
Q.14 What is sugar cane residue called?
Q.15 Glycerine is produced during production of?
Q.16 Vegetable ghee is manufactured by _____.
Q.17 Expand the NPK?
Q.18 Write any one name of a paper product.
Q.19 _____ is the most suitable fertiliser for paddy.
Q.20 _____ catalyst is used in the production of urea from CO_2 and NH_3 .

SECTION-C

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

- Q.21 Explain about the piping and instrumentations diagram.
- Q.22 What is difference between soap and detergents?
- Q.23 Draw the schematic representation of various equipment used in chemical process industry. (Any five)
- Q.24 Discuss the manufacturing detergents.
- Q.25 Discuss the chemical recovery of Kraft process.

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