

University of Mumbai
Online Examination 2020

Program: BE Chemical Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: CHDE7033

Course Name: Department Elective III - Petroleum Refining Technology

Time: 1 hour

Max. Marks: 50

NOTE: 1. All questions are compulsory

2. All questions carry equal marks.

- 1 What is the primary component of crude oil?
(A) Sulfur
(B) Carbon
(C) Hydrogen
(D) Nitrogen

- 2 Waxes present in petroleum products
(A) Can be separated out by distillation
(B) Are not soluble in them
(C) Crystallise out at low temperature
(D) Decrease their viscosity

- 3 Sour crude means the _____ bearing crude.
(A) Asphalt
(B) Sulphur compounds
(C) Wax
(D) Nitrogen compounds

- 4 Which of the following has the highest viscosity of all (at a given temperature)?
(A) Naphtha
(B) Fuel oil
(C) Light diesel oil
(D) Petrol

5 For paraffinic base Co-relation Index is

- (A) 0
- (B) 100
- (C) 38^0
- (D) Indefinite

6 Correlation index is related to

- (A) specific gravity and boiling point
- (B) Vapor pressure
- (C) Heat sensitivity
- (D) Flash point

7 “True Boiling Point (TBP)” analysis Provides information about

- (A) Viscosity Index
- (B) Reid Vapour pressure
- (C) Octane Number
- (D) % of fraction, base of crude

8 High boiling stock is prone to degrade at temperature above 370^0 C therefore these are further processed by

- (A) Simple Distillation
- (B) Vacuum Distillation
- (C) Steam Distillation
- (D) Extractive Distillation

09. The terminology used for the bottom most product from the vacuum crude distillation unit is

- (A) Residual crude
- (B) Residuum
- (C) Reduced crude
- (D) Petrolatum

10. Vacuum maintained in the vacuum distillation tower of the crude distillation plant is about _____ mm Hg (absolute).

- (A) 5-10
- (B) 30-80
- (C) 150-250
- (D) 350-400

11. Salt content (measured as sodium chloride) in electrically desalted crude oil comes down to a level of about _____ ptb (pounds per thousand barrel).

- (A) 0.03
- (B) 3
- (C) 35
- (D) 70

12. Crude topping column operates at _____ pressure.

- (A) Atmospheric
- (B) 10 atm
- (C) Vacuum
- (D) 3 atm.

13. Which is the most undesirable component in kerosene?

- (A) Aromatics
- (B) i-paraffins
- (C) n-paraffins
- (D) Naphthenes

14. Dearomatisation of kerosene (by liquid sulfur dioxide extraction) is done to _____ .

- (A) Increase its smoke point
- (B) Improve its oxidation stability
- (C) Decrease the breathing loss
- (D) Decolourize it

15. _____ treated lubes have better oxidation stability.
- (A) Phenol
 - (B) Furfural
 - (C) Mixtures of Cresols
 - (D) Propane
16. Doctor's solution used for the sweetening of petroleum products is _____ .
- A. Sodium plumbite
 - B. Sodium sulphite
 - C. Sodium thiosulphate
 - D. Lead sulphate
17. _____ is not an important refinery process for upgrading the quality of lubricating oil.
- A. Deoiling
 - B. Solvent refining
 - C. Clay treatment
 - D. Hydrotreatment
18. The solvent used in duo-sol extraction for lube oil up-gradation is a mixture of _____
- A. Propane & phenol-cresol mixture
 - B. Methyl ethyl ketone & glycol
 - C. Phenol & furfural
 - D. Propane & liquid sulfur dioxide
19. Isomerisation converts the _____ tot-paraffins.

- (A) Paraffins
- (B) Olefins
- (C) Naphthenes
- (D) Pentene

20. The catalyst used in the alkylation process is

- (A) Sulphuric acid
- (B) Nickel
- (C) Silica gel
- (D) Alumina

21. Which is the most effective catalyst used in catalytic cracking of petroleum products?

- (A) Iron oxide
- (B) Nickel
- (C) Vanadium pentoxide
- (D) Zeolite

22 Alkylation

- (A) Causes olefins to combine with each other
- (B) Causes olefins to combine with iso-paraffins
- (C) Converts iso-paraffin into olefin
- (D) Converts olefin into paraffin

23. Which of the following reactions is undesirable in the production of catalytically reformed gasoline?

- (A) Dehydrogenation of naphthene
- (B) Dehydrogenation of lower paraffins
- (C) Dehydrocyclization of higher paraffins
- (D) Isomerization of paraffins

24. The important property of bitumen which judges the quality of bitumen is

- A. Viscosity Index
- B. pour point
- C. Aniline point
- D. Penetration Index

25. Asphalts obtained from vacuum distillation unit shall have Pour point and asphalts obtained from deasphalting operations have a pour point.

- A. low, low
- B. high, high
- C. high, low
- D. low, high
