

- (A) Herbal plants
  - (B) Used vegetable oils
  - (C) LSHS
  - (D) Bagasse
- Answer: Option B

04. Which of the following has maximum hydrogen/carbon ratio (by weight)?

- (A) Naphtha
- (B) Gasoline
- (C) Diesel
- (D) Fuel oil

Answer: Option B

05. A fuel oil consists of 4 fractions A, B, C and D. Their molar compositions and vapour pressures are given below: The vapour pressure of the fuel oil will be \_\_\_\_\_ mm Hg.

Constituents	Mole %	Pure component vapour Pressure in mm Hg
A	10	700
B	20	720
C	30	740
D	40	750
Total	100	

- (A) 736
- (B) 727.5
- (C) 512
- (D) 767.8

Answer: Option A

06. Methyl tertiary butyl ether (MTBE), a high octane (octane no. = 115) gasoline blending component is produced by the simple additive reaction of isobutylene with

- (A) Methyl alcohol
- (B) Ethyl alcohol
- (C) Methane
- (D) Ethane

Answer: Option A

07. The first crude oil refinery of India is located at

- (A) Naharkatiya
- (B) Digboi
- (C) Kochi
- (D) Madras

Answer: Option B

08.  $C_nH_{2n}$  is the general formula for

- (A) Olefins
- (B) Naphthenes
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: Option C

09. The general formula of naphthenes is

- (A)  $C_nH_{2n+2}$
- (B)  $C_nH_{2n-6}$  (where,  $n \geq 6$ )
- (C)  $C_nH_{n-4}$
- (D) Same as that for olefins i.e.  $C_nH_{2n}$

Answer: Option B

10. Carbon percentage (by weight) in crude petroleum may be about

- (A) 65
- (B) 75
- (C) 85
- (D) 95

Answer: Option C

**11. Solvent used for dewaxing of petroleum products are**

- (A) Furfural
- (B) Methyl ethyl ketone (MEK)
- (C) Propane
- (D) Both (B) & (C)

Answer: Option C

**12. In catalytic cracking, the**

- (A) Gasoline obtained has a very low octane number
- (B) Pressure & temperature is very high
- (C) Gasoline obtained has very high aromatic content
- (D) Gasoline obtained has very high amount of gum forming compounds

Answer: Option C

**13. Petroleum liquid fuels having flash point greater than 66°C is considered as safe during storage and handling. Which of the following has flash point > 66°C?**

- (A) Naphtha
- (B) Petrol
- (C) Kerosene
- (D) Heavy fuel oil

Answer: Option D

**14. Pressure & temperature maintained in catalytic cracking is about**

- (A) 2 atm & 500°C
- (B) 10 atm & 500°C
- (C) 30 atm & 200°C
- (D) 50 atm & 750°C

Answer: Option A

**15. An upper limit of oil content is limited to about \_\_\_\_\_ percent for achieving efficient and satisfactory level of wax sweating.**

- (A) 5
- (B) 15
- (C) 40
- (D) 60

Answer: Option C

**16. Flash point of a liquid petroleum fuel gives an idea about its**

- (A) Volatility
- (B) Explosion hazards characteristics
- (C) Nature of boiling point diagram
- (D) All (A), (B) and (C)

Answer: Option D

**17. Hydrogen percentage (by weight) in crude petroleum may be about**

- (A) 5
- (B) 15
- (C) 25
- (D) 35

Answer: Option B

**18. Which of the following has the lowest cetane number?**

- (A) Aromatics
- (B) *i*-paraffins
- (C) Naphthene
- (D) Olefins

Answer: Option A

**19. Catalyst used in catalytic polymerisation which produces polymer gasoline is**

- (A) H<sub>2</sub>SO<sub>4</sub>
- (B) H<sub>3</sub>PO<sub>4</sub>
- (C) Both (A) and (B)
- (D) AlCl<sub>3</sub>

Answer: Option C

**20. Liquefied Petroleum Gas (LPG) is mainly a mixture of**

- (A) Propane & butane
- (B) Methane & ethane
- (C) High boiling olefins
- (D) High boiling naphthenes

Answer: Option A

**21. Pick out the correct statement pertaining to catalytic cracking.**

- (A) With increase in the reactor pressure, octane number of gasoline decreases
- (B) With increase in the reactor temperature, gasoline yield decreases for a given conversion
- (C) Percentage conversion increases with increase in the catalyst to oil ratio
- (D) All (A), (B) and (C)

Answer: Option D

**22. The vacuum maintained in vacuum distillation unit for reduced crude is about \_\_\_\_\_ mm Hg.**

- (A) 1.2
- (B) 12
- (C) 120
- (D) 700

Answer: Option C

**23. Flash point of an oil is determined by the**

- (A) Pensky Martens apparatus
- (B) Ramsbottom apparatus
- (C) Saybolt viscometer
- (D) Conradson apparatus

Answer: Option A

**24. 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

Answer: Option B

**25. Visbreaking**

- (A) Uses natural gas as feed
- (B) Is carried out at atmospheric pressure
- (C) Produces fuel oil of lower viscosity
- (D) Produces gasoline only

Answer: Option C

**26. Which of the following is not an important property of fuel oil/furnace oil?**

- (A) Sulphur content
- (B) Viscosity
- (C) Aniline point
- (D) Flash point

Answer: Option C

**27. Dearomatization of kerosene (by liquid sulphur dioxide extraction) is done to**

- (A) Increase its smoke point
- (B) Improve its oxidation stability
- (C) Decrease the breathing loss
- (D) None of these

Answer: Option B

**28. High aniline point of a petrofuel (say diesel) indicates that**

- (A) It is highly aromatic in nature
- (B) It is highly paraffinic in nature
- (C) It has a very low diesel index
- (D) Its ignition quality is very poor

Answer: Option B

**29. The main aim of cracking is to produce**

- (A) Gasoline
- (B) Lube oil
- (C) Petrolatum
- (D) Coke

Answer: Option A

**30. The most important property for a jet fuel is its**

- (A) Viscosity
- (B) Freezing point
- (C) Calorific value
- (D) Flash point

Answer: Option B

**31. Presence of aromatics in**

- (A) Diesel increases its cetane number
- (B) Kerosene increases its smoke point
- (C) Petrol increases its octane number
- (D) All (A), (B) and (C)

Answer: Option C

**32. The best method of determining sulphur in crude oil is by the \_\_\_\_\_ method.**

- (A) Kjeldahl
- (B) Dumas
- (C) Bomb calorimeter
- (D) Junkers calorimeter

Answer: Option C

**33. Which of the following is the most widely used cracking process in oil refineries?**

- (A) Dubbs process
- (B) T.C.C. moving bed process
- (C) Fluidised bed catalytic cracking process
- (D) Houdry's fixed bed process

Answer: Option C

**34. 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) Isomerisation of paraffins

Answer: Option B

**35. Catalytic cracking compared to thermal cracking of residue of vacuum distillation of crude oil**

- (A) Gives higher yield of petrol
- (B) Lower octane number of petrol
- (C) Higher sulphur content in the product
- (D) Higher gum forming material in petrol

Answer: Option A

**36. Pick out the wrong statement.**

- (A) A pale color of petroleum product indicates lower viscosity
- (B) Color of petroleum products indicates the degree of refinement
- (C) Lighter petroleum distillates are lighter in color than the heavier residual oils
- (D) Fluorescence of oils helps to detect its adulteration

Answer: Option A

**37. Which of the following is an additive used for improving the cetane number of diesel?**

- (A) Tetraethyl lead
- (B) Tetramethyllead
- (C) Ethyl nitrate or acetone
- (D) None of these

Answer: Option A

**38. Higher boiling fractions like atmospheric residue is distilled under vacuum at low temperature because at high temperature, there is a tendency of the predominance of**

- (A) Thermal cracking
- (B) Gum formation
- (C) Coking
- (D) Discoloration

Answer: Option C

**39. Octane number of gasoline produced by two stage fluidised catalytic cracking process is**

- (A) 80
- (B) 87
- (C) 92
- (D) 97

Answer: Option D

**40. Reforming converts**

- (A) Olefins into paraffins
- (B) Naphthenes into aromatics
- (C) Naphthenes into olefins
- (D) Naphthenes into paraffin

Answer: Option B

**41. Feedstock for polymerisation is**

- (A) Naphtha
- (B) Cracked gases rich in C<sub>2</sub> & C<sub>4</sub> olefins
- (C) Low boiling aromatics
- (D) None of these

Answer: Option B

**42. Which of the following has the minimum °API gravity of all?**

- (A) Diesel
- (B) Kerosene
- (C) Petrol
- (D) Furnace oil

Answer: Option D

**43. Olefins are**

- (A) Saturated hydrocarbons
- (B) Unsaturated cyclic compounds (hydrocarbons)
- (C) Present in substantially good quantity in crude petroleum
- (D) None of these

Answer: Option D

**44. Natural gas recovered along with crude oil from oil wells is called wet natural gas which has a higher \_\_\_\_\_ compared to the dry natural gas.**

- (A) Unsaturated hydrocarbon content
- (B) Calorific value
- (C) Quantity of propane
- (D) Quantity of butane

Answer: Option B

**45. Which of the following processes is used for the production of petroleum coke?**

- (A) Stabilisation
- (B) Visbreaking
- (C) Cracking
- (D) Reforming

Answer: Option C

**46. 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

Answer: Option B

**47. Deoiling of wax is done by its**

- (A) Heating
- (B) Cooling
- (C) Solvent extraction
- (D) Both (B) & (C)

Answer: Option D

**48. LPG stands for**

- (A) Liquid petroleum gas
- (B) Liquefied petrol gas
- (C) Liquid petrol gas
- (D) Liquefied petroleum gas

Answer: Option D

**49. The order of preference for feedstock to a catalytic reformer is**

- (A) Catalytic naphtha - coking naphtha - virgin naphtha
- (B) Coking naphtha - virgin naphtha - catalytic naphtha
- (C) Virgin naphtha - catalytic naphtha - coking naphtha
- (D) Virgin naphtha - coking naphtha - catalytic naphtha

Answer: Option B

**50. Char value of Kerosene is the amount of charred oil deposition on the wick obtained after burning it in a standard wick lamp at a standard rate for 24 hours. Char value of a good quality kerosene should be less than \_\_\_\_\_ mg/kg of kerosene.**

- (A) 1
- (B) 20
- (C) 100
- (D) 500

Answer: Option B

**51. Main boring diameter for petroleum well is 20-30 cms in diameter, while the depth of the oil well may be about \_\_\_\_\_ kms.**

- (A) 0.1 to 0.5
- (B) 1.5 to 4.5
- (C) 7.5 to 12.5
- (D) 15-20

Answer: Option B

**52. Catalyst used in isomerisation process is**

- (A)  $H_2SO_4$
- (B)  $H_3PO_4$
- (C) HF
- (D)  $AlCl_3$

Answer: Option D

**53. The amount of tetraethyl lead added to improve the octane number of motor gasoline is around \_\_\_\_\_ c.c per gallon of petrol.**

- (A) 3
- (B) 300
- (C) 3000
- (D) 1000

Answer: Option A

**54. Which of the following does not require preheating during storage in the storage tank as well as during atomisation through burners?**

- (A) PCM
- (B) Tar
- (C) Light diesel oil
- (D) Low viscosity furnace oil

Answer: Option C

**55. Which of the following categories of gasoline has the highest lead susceptibility?**

- (A) Straight run gasoline

- (B) Platinum reformed gasoline
- (C) Catalytical cracked gasoline
- (D) Polymer gasoline

Answer: Option A

**56. Octane number of *n*-heptane is assumed to be**

- (A) 100
- (B) 0
- (C) 70
- (D)  $\infty$

Answer: Option B

**57. Tetra-ethyl lead is added in gasoline to**

- (A) Increase its smoke point
- (B) Reduce gum formation
- (C) Reduce the pour point
- (D) Increase its octane number

Answer: Option D

**58. The conductivity of crude oil-water mixture depends on the**

- (A) pH value
- (B) Water percentage
- (C) Temperature
- (D) All (A), (B) and (C)

Answer: Option D

**59. During electrical desalting of crude oil, the electrical conductivity of a mixture of crude oil and water (which ranges between 3 to 8% water) \_\_\_\_\_ with increase in the amount of water.**

- (A) Decreases
- (B) Increases
- (C) Remains unchanged
- (D) Decreases linearly

Answer: Option B

**60. Concentration of H<sub>2</sub>SO<sub>4</sub> catalyst in alkylation is kept between 90-98%, because H<sub>2</sub>SO<sub>4</sub> having concentration.**

- (A) Less than 90% promotes polymerisation
- (B) More than 98% promotes cracking
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: Option C

**61. Quinoline is a/an \_\_\_\_\_ compound.**

- (A) Sulphur
- (B) Nitrogen
- (C) Oxygen
- (D) None of these

Answer: Option B

**62. Cracking is**

- (A) An exothermic reaction
- (B) An endothermic reaction
- (C) Favoured at very low temperature
- (D) None of these

Answer: Option B

**63. Choose the correct statement regarding thermal cracking.**

- (A) Moderate changes in operating temperature does not change the depth of cracking
- (B) Increased residence time results in the decreased severity of cracking
- (C) At low pressure, the yield of lighter hydrocarbons are more
- (D) Greater depth of cracking gives lower octane number gasoline

Answer: Option D

**64. Catalyst used in alkylation process is**

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

**65. Sour crude means the \_\_\_\_\_ bearing crude.**

- (A) Asphalt
  - (B) Sulphur compounds
  - (C) Wax
  - (D) Nitrogen compounds
- Answer: Option B

**66. Good quality kerosene should have**

- (A) Low smoke point
  - (B) High smoke point
  - (C) High aromatics content
  - (D) Low paraffins content
- Answer: Option B

**67. Pick out the wrong statement.**

- (A) Iso-paraffin crack faster than *n*-paraffin.
  - (B) Catalytic cracking is endothermic, but the regeneration of catalyst is exothermic
  - (C) Rate of decomposition of olefins in catalytic cracking is slightly slower than the thermal cracking
  - (D) None of these
- Answer: Option B

**68. Which of the following fractions of petroleum contains maximum sulphur?**

- (A) Diesel
  - (B) Gasoline
  - (C) Naphtha
  - (D) Atmospheric residue
- Answer: Option D

**69. The solvent used in Barisol dewaxing process is**

- (A) Hexane
  - (B) Furfural
  - (C) Benzol and ethylene dichloride
  - (D) Methyl ethyl ketone (MEK)
- Answer: Option C

**70. 1 centistoke is equal to \_\_\_\_\_ Redwood I seconds.**

- (A) 1
  - (B) 4.08
  - (C) 0.408
  - (D) 40.8
- Answer: Option B

**71. Testing of the knocking characteristics of petrolfuels is done in a \_\_\_\_\_ engine.**

- (A) Carnot
  - (B) CFR (Co-operative fuel research)
  - (C) Stirling
  - (D) Diesel
- Answer: Option B

**72. Higher vapour pressure of gasoline indicates**

- (A) Low flash point
  - (B) High breathing loss
  - (C) Both (A) and (B)
  - (D) Neither (A) nor (B)
- Answer: Option D

**73. Aromatics are desired constituents of**

- (A) Lubricating oil



- (B) Diesel
  - (C) Kerosene
  - (D) Petrol
- Answer: Option D

**74. Which parameter is used for the grading of paraffin waxes?**

- (A) Specific gravity
  - (B) Melting point
  - (C) Viscosity
  - (D) Penetration number
- Answer: Option C

**75. The average boiling point of aviation turbine fuel is closest to that of**

- (A) Lubricating oils
  - (B) LPG
  - (C) Diesel
  - (D) Kerosene
- Answer: Option D

**76. Which of the following is the easiest to crack?**

- (A) Paraffins
  - (B) Olefins
  - (C) Naphthenes
  - (D) Aromatics
- Answer: Option A

**77. Increase in the specific gravity of petroleum products indicates**

- (A) Decrease in paraffin content
  - (B) Increase in thermal energy per unit weight
  - (C) Increase in aromatic content
  - (D) Higher H/C ratio
- Answer: Option A

**78. Clay treatment is used to remove**

- (A) Salt from the crude oil
  - (B) Colour & dissolved gases from cracked gasoline
  - (C) Wax from lube oil
  - (D) None of these
- Answer: Option C

**79. Electrical desalting of crude oil removes the \_\_\_\_\_ impurities.**

- (A) Oleophilic
  - (B) Oleophobic
  - (C) Both (A) and (B)
  - (D) Neither (A) nor (B)
- Answer: Option B

**80. \_\_\_\_\_ chloride present in crude petroleum as impurity is the most prolific producer of HCl during distillation.**

- (A) Magnesium
  - (B) Potassium
  - (C) Calcium
  - (D) Sodium
- Answer: Option A

**81. The main purpose of recycling the byproduct hydrogen gas in the reformer reactor is to**

- (A) Obviate catalyst poisoning
  - (B) Maintain the reaction temperature
  - (C) Sustain the reactor pressure
  - (D) Hydrogenate the feed stock
- Answer: Option C

**82. Ethyl mercaptan is a/an \_\_\_\_\_ compound.**

- (A) Sulphur
- (B) Nitrogen

- (C) Oxygen
  - (D) None of these
- Answer: Option A

**83. Gasoline extracted from natural gas (by compression and cooling) is called the \_\_\_\_\_ gasoline.**

- (A) Polymer
  - (B) Unleaded
  - (C) Casing head
  - (D) Straight run
- Answer: Option B

**84. Which of the following petroleum products contain minimum sulphur?**

- (A) Naphtha
  - (B) Kerosene
  - (C) LSHS
  - (D) Furnace oil
- Answer: Option A

**85. Catalyst used in the catalytic polymerisation is**

- (A) Phosphoric acid on kieselguhr
  - (B) Aluminium chloride
  - (C) Nickel
  - (D) Vanadium pentoxide
- Answer: Option A

**86. Smoke point of kerosene is the**

- (A) Time after which smoking starts on burning
  - (B) Temperature at which smoking starts
  - (C) Maximum height of flame (in mm) without causing smoking, when burnt in a standard lamp
  - (D) None of these
- Answer: Option B

**87. Crude topping column operates at \_\_\_\_\_ pressure.**

- (A) Atmospheric
  - (B) 10 atm
  - (C) Vacuum
  - (D) 3 atm
- Answer: Option A

**88. The most suitable solvent for deasphalting vacuum residue is**

- (A) Propane
  - (B) Methyl ethyl ketone
  - (C) Doctor's solution
  - (D) Methanol amine
- Answer: Option B

**89. A typical yield of diesel in straight run distillation of crude oil may be about \_\_\_\_\_ percent.**

- (A) 8
  - (B) 18
  - (C) 28
  - (D) 35
- Answer: Option A

**90. \_\_\_\_\_ base crude oil is also called asphaltic crude.**

- (A) Paraffinic
  - (B) Naphthenic
  - (C) Mixed
  - (D) Aromatic
- Answer: Option B

**91. True vapour pressure of a petroleum fraction \_\_\_\_\_ Reid vapour pressure.**

- (A) Is less than
- (B) Is more than

- (C) Is same as
  - (D) May be either more or less than
- Answer: Option D

**92. Higher pressure in the reforming reactor**

- (A) Increases coke formation
- (B) Increases the rate of reaction
- (C) Produces high octane number gasoline
- (D) None of these

Answer: Option D

**93. Pick out the wrong statement.**

- (A) Higher temperature is employed in visbreaking than in thermal cracking
- (B) Pyrolysis is a mild thermal cracking process
- (C) Lead susceptibility of petrol produced by catalytic process is more than that produced by thermal cracking
- (D) Operating pressure and temperature in thermal cracking process is more than that in catalytic cracking process

Answer: Option A

**94. Liquefied Petroleum Gas (LPG) in domestic use cylinders is in the liquid form. The density of LPG in liquid form is about \_\_\_\_\_ of that of water (i.e. 1 gm/c.c).**

- (A) One fourth
- (B) One third
- (C) Half
- (D) One eighth

Answer: Option C

**95. The characterisation factor of crude petroleum oil is around**

- (A) 3
- (B) 11
- (C) 22
- (D) 28

Answer: Option B

**96. Pick out the wrong statement.**

- (A) Pensky-Marten apparatus is used for determining flash points above 50°C
- (B) Characterisation factor of paraffinic crude oil is more than 12
- (C) Abel apparatus is used for determining flash points below 50°C
- (D) An oil having high susceptibility to change in viscosity with temperature changes, has a high viscosity index

Answer: Option D

**97. Molecular weight of crude petroleum may be around**

- (A) 50
- (B) 250
- (C) 1500
- (D) 5000

Answer: Option C

**98. Pour point of a petrofuel is**

- (A) Multiple of 3°F
- (B) Multiple of 5°F
- (C) 5°C below the temperature at which oil ceases to flow
- (D) None of these

Answer: Option C

**99. Octane number (unleaded) of gasoline produced by isomerisation of butane may be about**

- (A) 45
- (B) 55
- (C) 70
- (D) 90

Answer: Option C

**100. Which of the following is not a sulphur compound present in petroleum?**

- (A) Thiophenes
  - (B) Mercaptans
  - (C) Sulphones
  - (D) Pyrroles
- Answer: Option D

**101. Refractive index of a petrofuel which is the ratio of velocity of light in air to its velocity in the petrofuel gives an indication if its**

- (A) Molecular weight
- (B) Aromatics content
- (C) Both 'a' & 'b'
- (D) Neither 'a' nor 'b'

Answer: Option C

**102. Most widely used solvent for dewaxing is**

- (A) Methyl-ethyl-ketone (MEK)
- (B) Naphtha
- (C) Petroleum ether
- (D) Sodium plumbite

Answer: Option A

**103. 'Solvent naphtha' used mostly as a solvent in paints and perfumery is produced by the \_\_\_\_\_ of virgin naphtha into small boiling range cuts.**

- (A) Steam reforming
- (B) Distillation
- (C) Desulphurisation
- (D) None of these

Answer: Option B

**104. Extractor temperature is maintained at  $-20^{\circ}\text{C}$  in Edeleanu process to reduce the \_\_\_\_\_ of kerosene.**

- (A) Smoke point
- (B) Paraffins
- (C) Aromatics
- (D) Naphthenes

Answer: Option B

**105. Straight run naphtha is converted into high octane number petrol (gasoline) by catalytic**

- (A) Cracking
- (B) Polymerisation
- (C) Reforming
- (D) Isomerisation

Answer: Option C

**106. Vacuum maintained in the vacuum distillation column in oil refinery is in the range of about \_\_\_\_\_ mm Hg absolute.**

- (A) 1 to 5
- (B) 30 to 80
- (C) 250 to 350
- (D) 450 to 500

Answer: Option B

**107. In a refinery petroleum crude is fractionated into gas fraction, light ends, intermediate distillates, heavy distillates, residues and by products. The group of products including gas oil, diesel oil and heavy fuel oil belongs to the fraction**

- (A) Heavy distillates
- (B) Intermediate distillates
- (C) Light ends
- (D) Residues

Answer: Option A

**108. Paraffins are desirable in lubricating oil, as it has got high**

- (A) Viscosity
- (B) Viscosity index
- (C) Smoke point

(D) Pour point  
Answer: Option C

**109. Which is almost absent in crude petroleum?**

- (A) Olefins
  - (B) Mercaptans
  - (C) Naphthenes
  - (D) Cycloparaffins
- Answer: Option B

**110. Platforming is a \_\_\_\_\_ process.**

- (A) Moving bed
  - (B) Fluidised bed
  - (C) Non-regenerative & fixed bed
  - (D) Regenerative
- Answer: Option C

**111. Hydrocracking employs**

- (A) High pressure & temperature
  - (B) Low pressure & temperature
  - (C) High pressure and low temperature
  - (D) High temperature and low pressure
- Answer: Option A

**112. With increase in the molecular weight of aromatic present in kerosene, its smoking tendency**

- (A) Increases
  - (B) Decreases
  - (C) Remain same
  - (D) Is unpredictable
- Answer: Option A

**113. Pick out the wrong statement.**

- (A) Higher specific gravity of petroleum products means higher C/H ratio
  - (B) Aromatics have lower specific gravity than corresponding paraffins
  - (C) Hydrocarbons of low specific gravity (e.g., paraffins) possess the maximum thermal energy per unit volume
  - (D) Hydrocarbons of high specific gravity (e.g., aromatics) possess the maximum thermal energy per unit weight
- Answer: Option B

**114. Pick out the wrong statement.**

- (A) Alkylation produces a larger iso-paraffin (having higher octane number) from the reaction of an olefin with smaller iso-paraffin
  - (B) Catalytic alkylation processes use HF,  $\text{AlCl}_3$  &  $\text{H}_2\text{SO}_4$  as Catalysts
  - (C) All the alkylation processes use very high temperature ( $> 1000^\circ\text{C}$ )
  - (D) Gasoline having an octane number of 90 can be produced by alkylation process
- Answer: Option C

**115. Which of the following is a Naphthene?**

- (A) Butene
  - (B) Butadiene
  - (C) Cyclohexane
  - (D) Acetylene
- Answer: Option C

**116. Which of the following is a non-regenerative fixed bed catalytic reforming process?**

- (A) Hydroforming
  - (B) Thermoform catalytic reforming
  - (C) Platforming
  - (D) Hyperforming
- Answer: Option C

**117. Preheating temperature of medium viscosity furnace oil for better atomisation through burner is about \_\_\_\_\_  $^\circ\text{C}$ .**

- (A) 50
- (B) 70
- (C) 90
- (D) 140

Answer: Option C

**118. Presence of predominantly large quantity of aromatics (polynuclear) is not desirable in aviation fuel, because it has**

- (A) High pour point and low smoke point
- (B) Low viscosity index
- (C) High self-ignition temperature
- (D) All (A), (B) and (C)

Answer: Option B

**119. Which of the following has the highest flash point of all?**

- (A) Diesel
- (B) Kerosene
- (C) Petrol
- (D) Furnace oil

Answer: Option D

**120. Which of the following is desirable in petrol (gasoline) but undesirable in kerosene?**

- (A) Paraffins
- (B) Aromatics
- (C) Mercaptans
- (D) Naphthenic acid

Answer: Option C

**121. Solvent deoiling process is used for separating oil and soft wax from hard wax. Methyl iso-butyl ketone and methyl ethyl ketone (MEK) are two commonly used deoiling solvents. Use of former as the deoiling solvent has the advantages of the**

- (A) Elimination of solvent drying facility
- (B) Higher nitration temperature
- (C) Lower solvent dilution ratio
- (D) All (A), (B) & (C)

Answer: Option D

**122. Which of the following factors does not govern the mechanism of petroleum formation from organic sources?**

- (A) pH of the soil
- (B) Bacterial action
- (C) Heat
- (D) Pressure

Answer: Option A

**123. Smoke point of a good burning kerosene may be around \_\_\_\_\_ mm.**

- (A) 0-5
- (B) 20-25
- (C) 60-75
- (D) 100-120

Answer: Option B

**124. Maximum viscosity of tar/PCM/fuel oil for easy and efficient atomisation in conventional burner is \_\_\_\_\_ centistokes (or 100 Redwood I seconds).**

- (A) 5
- (B) 25
- (C) 50
- (D) 100

Answer: Option B

**125. Gum formation in stored gasoline is mainly due to the**

- (A) Alkylation of unsaturated
- (B) Presence of sulphur
- (C) Oxidation & polymerisation of unsaturated
- (D) Higher aromatic content

Answer: Option B

**126. Aromatics have the highest \_\_\_\_\_ of all the hydrocarbons of same carbon atoms.**

- (A) Smoke point
- (B) Octane number
- (C) Cetane number
- (D) Viscosity

Answer: Option B

**127. LPG when brought to atmospheric pressure & temperature will be a**

- (A) Liquid lighter than water
- (B) Liquid heavier than water
- (C) Gas lighter than air
- (D) Gas heavier than air

Answer: Option D

**128. Lane and Garton classification of petroleum is based on its**

- (A) Composition
- (B) Specific gravity
- (C) Optical properties
- (D) Viscosity

Answer: Option B

**129. Naphthenic acid is a/an \_\_\_\_\_ compound.**

- (A) Sulphur
- (B) Nitrogen
- (C) Oxygen
- (D) None of these

Answer: Option C

**130. Road grade bitumen is produced from vacuum residue by its**

- (A) Aeration
- (B) Pyrolysis
- (C) Hydrogenation
- (D) Steam reforming

Answer: Option D

**131. Flash point of diesel/kerosene (>50°C) is determined by the**

- (A) Abel apparatus
- (B) Pensky-Martens apparatus
- (C) Saybolt chromometer
- (D) None of these

Answer: Option A

**132. Products drawn from the top to bottom of the crude oil distillation column has progressively increasing**

- (A) Boiling points
- (B) Molecular weight
- (C) C/H ratio
- (D) All (A), (B) and (C)

Answer: Option D

**133. Which of the following is desirable in diesel and kerosene but is undesirable in gasoline?**

- (A) Aromatics
- (B) Mercaptans
- (C) Paraffins
- (D) Naphthenic acid

Answer: Option A

**134. Iso-octane is used as a reference substance in the definition of octane number and it is assigned an octane number value of 100. Iso-octane is chemically known as**

- (A)  $\alpha$ -methyl naphthalene
- (B) 2-2-4 tri methyl pentane
- (C) 1, 3 butadiene
- (D) Tetra methyl ethylene

Answer: Option B

**135. Cetane number of alpha methyl naphthalene is assumed to be**

- (A) 0
- (B) 100
- (C) 50
- (D)  $\infty$

Answer: Option A

**136. Cetane number of a diesel fuel is the measure of its**

- (A) Ignition delay
- (B) Smoke point
- (C) Viscosity
- (D) Oxidation stability

Answer: Option A

**137. Mercaptans is represented as (where R and R' are alkyl groups)**

- (A) R-COOH
- (B) R-S-H
- (C) R-S-R
- (D) R-S-R'

Answer: Option B

**138. Water content in the crude oil as it comes out of oil well may be upto \_\_\_\_\_ percent.**

- (A) 2
- (B) 5
- (C) 10
- (D) 25

Answer: Option D

**139. Pick out the wrong statement about the smoking tendency of various hydrocarbon constituents of kerosene.**

- (A) Smoking tendency of hydrocarbons increases in the order: paraffins  $\rightarrow$  isoparaffins  $\rightarrow$  naphthenes  $\rightarrow$  aromatics
- (B) Smoking tendency of paraffins increases with decrease in its molecular weight
- (C) Smoking tendency of naphthenes decreases with its increasing molecular weight & also on addition of double bond
- (D) Smoking tendency of aromatics decreases with increase in its molecular weight

Answer: Option B

**140. Tetraethyl lead is added to the petrol to increase its octane number, because its octane number is**

- (A) More than 100
- (B) Round about 100
- (C) Between 50 and 100
- (D) Less than 25

Answer: Option A

**141. Antioxidants are added in petrol to**

- (A) Impart colour to it, for easy identification
- (B) Minimise the gum formation
- (C) Prevent icing of the carburettor
- (D) Prevent the lead build up in engines

Answer: Option B

**142. Aniline point is the temperature at which**

- (A) Equal weight of diesel & the aniline are completely miscible
- (B) Equal weight of aniline & the test sample are completely miscible
- (C) Equal volume of aniline & the test sample are completely miscible
- (D) Aniline vaporises

Answer: Option C

**143. Maximum sulphur percentage in low sulphur heavy stock (LSHS) furnace oil is about**

- (A) 0.1
- (B) 1



(C) 2.5

(D) 3.5

Answer: Option B

**144. Asphalts are**

(A) Low molecular weight & low boiling point compounds present in petroleum

(B) Desirable in catalytic cracking feedstock, because they produce coke

(C) Readily oxidisable and form carbonaceous sludge

(D) All (A), (B) & (C)

Answer: Option C

**145. Glycol added to petrol acts as a/an \_\_\_\_\_ agent.**

(A) Anti-knocking

(B) Anti-icing

(C) Anti-gum forming

(D) Dewaxing

Answer: Option B

**146. "Breathing loss" on storage of gasoline occurs due to the**

(A) Presence of unsaturated air

(B) Fluctuation of ambient temperature during day and night

(C) Both (A) and (B)

(D) Neither (A) nor (B)

Answer: Option B

**147. Most commonly used crude heater before the fractionation tower in a refinery is the \_\_\_\_\_ heater.**

(A) Electric immersion

(B) Pipestill

(C) Steam coil

(D) None of these

Answer: Option B

**148. Thermofor catalytic cracking process is a \_\_\_\_\_ process.**

(A) Fixed bed

(B) Moving bed

(C) Fluidised bed

(D) Non-catalytic

Answer: Option D

**149. The most widely used crude topping column in refineries is the \_\_\_\_\_ column.**

(A) Bubble-cap

(B) Packed bed

(C) Fluidised bed

(D) Perforated plate

Answer: Option A

**150. \_\_\_\_\_ treatment is done for appreciable improvement in viscosity index of lubricating oil.**

(A) Acid

(B) Solvent extraction

(C) Alkali

(D) Clay

Answer: Option B

**151. The main use of heavy gas oil produced by the vacuum distillation unit is as a**

(A) Blending component for kerosene

(B) Blending component for petrol

(C) Feedstock for fluid catalytic cracking unit

(D) None of these

Answer: Option C

**152. Water separometer index (modified) (WSIM) of a petrofuel is the measure of its**

(A) Emulsification tendency

(B) Water separation characteristics

- (C) Water content
  - (D) Water absorbing capacity from atmosphere
- Answer: Option B

**153. Butadiene is a/an**

- (A) Di-olefin
- (B) Naphthene
- (C) Aromatic
- (D) Olefin

Answer: Option A

**154. Sweetening of petroleum product means the removal of**

- (A) Sulphur & its compounds
- (B) Water
- (C) Organic impurities
- (D) Wax

Answer: Option A

**155. Tanks used for the storage of petroleum products (which are inflammable) should be painted with a \_\_\_\_\_ paint.**

- (A) Black
- (B) White
- (C) Red
- (D) Yellow

Answer: Option B

**156. Aniline point of high speed diesel may be about \_\_\_\_\_ °C.**

- (A) 35
- (B) 70
- (C) 105
- (D) 150

Answer: Option B

**157. Which one is used to determine the colour of petroleum products?**

- (A) Colour comparator
- (B) Saybolt chromometer
- (C) Cleveland apparatus
- (D) None of these

Answer: Option A

**158. Which of the following theories of origin of petroleum does not explain the presence of nitrogen & sulphur compounds in crude oil?**

- (A) Modern theory
- (B) Carbide theory
- (C) Engler theory
- (D) All (A), (B) and (C)

Answer: Option B

**159. True boiling point apparatus is used for the**

- (A) Determination of characterisation factor
- (B) Evaluation of oil stocks
- (C) Determination of true vapour pressure
- (D) None of these

Answer: Option D

**160. Which of the following gasoline (unleaded) has the least octane number?**

- (A) Catalytically cracked gasoline
- (B) Straight run gasoline
- (C) Catalytically reformed gasoline
- (D) Polymer gasoline

Answer: Option B

**161. Sulphur content in lighter and heavier petroleum products is generally determined respectively by**

- (A) Lamp method and bomb method

- (B) Bomb method and lamp method
  - (C) Bomb method and quartz tube method
  - (D) Quartz tube method and lamp method
- Answer: Option B

**162. A multigrade lubricating oil means an oil having high**

- (A) Viscosity index
- (B) Viscosity
- (C) Aniline point
- (D) Flash point

Answer: Option A

**163. The octane number of aviation gasoline may be**

- (A) 79
- (B) 87
- (C) 97
- (D) > 100

Answer: Option D

**164. Octane number (unleaded) of reformed gasoline may be upto**

- (A) 60
- (B) 70
- (C) 80
- (D) 90

Answer: Option D

**165. Equal volumes of aniline and diesel oil when mixed at room temperature (during summer) was found to be completely miscible. It means that the aniline point of the diesel is \_\_\_\_\_ the room temperature.**

- (A) More than
- (B) Less than
- (C) Same as
- (D) Either more or less; depends on the room temperature

Answer: Option C

**166. Reforming**

- (A) Uses naphtha as feedstock
- (B) Does not much affect the molecular weight of the feed
- (C) Improves the quality & yield of gasoline
- (D) All (A), (B) and (C)

Answer: Option D

**167. The coking process normally mostly used in Indian oil refineries is the \_\_\_\_\_ coking process.**

- (A) Delayed
- (B) Flexi
- (C) Fluid
- (D) Contact

Answer: Option A

**168. Feed for reforming is generally**

- (A) Naphtha or straight run gasoline
- (B) Reduced crude
- (C) Vacuum gas oil
- (D) Atmospheric gas oil

Answer: Option A

**169. The proper arrangement of the petroleum fractions in order of their boiling points is**

- (A) Lubricating oil > diesel > petrol > LPG
- (B) Lubricating oil > petrol > diesel > LPG
- (C) Petrol > lubricating oil > diesel > LPG
- (D) Petrol > diesel > LPG > lubricating oil

Answer: Option A

**170. H/C ratio (by weight) for the same number of carbon atoms is the highest in case of**

- (A) Aromatics
  - (B) Paraffins
  - (C) Olefins
  - (D) Naphthenes
- Answer: Option D

**171. Diesel used in naval applications has a minimum cetane number of**

- (A) 25
- (B) 35
- (C) 45
- (D) 65

Answer: Option C

**172. Highest quality bitumen is produced from the \_\_\_\_\_ crude oil.**

- (A) Paraffinic
- (B) Naphthenic
- (C) Intermediate
- (D) Mixed

Answer: Option B

**173. Crude oil is transported inland from oil field to refineries, mainly by the**

- (A) Road tankers
- (B) Rail tankers
- (C) Underground pipelines
- (D) None of these

Answer: Option C

**174. Molecular weight of petrol may be about**

- (A) 40-60
- (B) 100-130
- (C) 250-300
- (D) 350-400

Answer: Option B

**175. Flash point of atmospheric distillation residue is determined by \_\_\_\_\_ apparatus.**

- (A) Pensky-Martens (closed cup type)
- (B) Abel
- (C) Cleveland (open cup type)
- (D) None of these

Answer: Option C

**176. A typical yield of kerosene in straight run distillation of crude oil may be about \_\_\_\_\_ percent.**

- (A) 4
- (B) 10
- (C) 18
- (D) 26

Answer: Option B

**177. Though increased pressure has a retarding effect on cracking reaction, yet in actual process, a positive pressure of 10-15 kgf/cm<sup>2</sup> is maintained during cracking mainly to**

- (A) Increase the yield of light distillates
- (B) Suppress coke formation
- (C) Enhance the octane number of gasoline
- (D) Reduce gum content in gasoline

Answer: Option B

**178. Casing head gasoline is the liquid**

- (A) Butane
- (B) Propane
- (C) Natural gas
- (D) Gasoline separated from wet natural gas by compression

Answer: Option A

**179. Which of the following is the most important property for a jet fuel?**

- (A) Cloud point
  - (B) Pour point
  - (C) Colour
  - (D) Freezing point
- Answer: Option D

**180. The pressure (kg/cm<sup>2</sup>) and temperature (°C) maintained in electrical desalters for crude oil are respectively**

- (A) 10 and 120
- (B) 1 and 200
- (C) 50 and 250
- (D) 10 and 300

Answer: Option B

**181. Pyrolysis of kerosene or natural gasoline is done to produce mainly the**

- (A) Olefins and aromatics
- (B) Lighter paraffins
- (C) Stabilised gasoline
- (D) Diesel

Answer: Option A

**182. A good lubricant should have high**

- (A) Viscosity index
- (B) Volatility
- (C) Pour point
- (D) None of these

Answer: Option A

**183. 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

Answer: Option C

**184. Name the hydrocarbon having the poorest oxidation stability.**

- (A) Naphthene
- (B) Olefin
- (C) Paraffin
- (D) Aromatics

Answer: Option D

**185. 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

Answer: Option B

**186. Pick out the additive property of lube oil out of following.**

- (A) °API gravity
- (B) Specific gravity
- (C) Viscosity
- (D) Flashpoint

Answer: Option A

**187. Gasoline yield in catalytic reforming of naphtha may be about \_\_\_\_\_ percent by weight.**

- (A) 85
- (B) 65
- (C) 50
- (D) 98

Answer: Option A

**188. Phenols are added in gasoline to**

- (A) Improve the octane number
- (B) Act as an antioxidant
- (C) Reduce its viscosity
- (D) Increase its pour point

Answer: Option B

**189. Percentage of straight run gasoline in a typical crude oil may be around**

- (A) 6
- (B) 18
- (C) 38
- (D) 52

Answer: Option D

**190. Paraffin base crude oil as compared to asphalt base crude gives**

- (A) Higher yield of straight run gasoline
- (B) Higher octane number gasoline
- (C) Lower viscosity index lube oil
- (D) Poorer yield of lube oil

Answer: Option A

**191. The main reaction in reforming is the**

- (A) Dehydrogenation of naphthenes
- (B) Hydrogenation of naphthenes
- (C) Hydrocracking of paraffins
- (D) Saturation of olefins

Answer: Option A

**192. Petrolatum is**

- (A) Same as petroleum ether
- (B) Petroleum coke
- (C) A mixture of microcrystalline wax in viscous hydrocarbon liquids
- (D) None of these

Answer: Option C

**193. Clay treatment of petroleum products**

- (A) Decolorizes & stabilises cracked gasoline
- (B) Desulphurise straight run gasoline & kerosene
- (C) Adsorb arsenic from feedstock to catalytic reforming
- (D) All (A), (B) & (C)

Answer: Option D

**194. Flash point of an oil gives an idea of the**

- (A) Nature of boiling point diagram of the system
- (B) Amount of low boiling fraction present
- (C) Explosion hazards
- (D) All (A), (B) and (C)

Answer: Option A

**195. Aniline point is a property of the**

- (A) Diesel
- (B) LPG
- (C) Naphtha
- (D) Gasoline

Answer: Option C

**196. Ethyl mercaptan is added to the Doctor negative LPG for facilitating the detection of its leakage (by bad odour) to the extent of about \_\_\_\_\_ ppm.**

- (A) 1
- (B) 50
- (C) 5000
- (D) 10000

Answer: Option B

**197. Which of the following constituents present in petroleum is responsible for ash formation?**

- (A) Nitrogen compounds
  - (B) Organometallic compounds
  - (C) Sulphur compounds
  - (D) Oxygen compounds
- Answer: Option C

**198. The reservoir rock containing petroleum has**

- (A) Low porosity
  - (B) High permeability
  - (C) High porosity
  - (D) Both (B) and (C)
- Answer: Option D

**199. Polymerisation**

- (A) Produces i-octane from cracked gases containing i-butane and butene
  - (B) Causes olefins to combine with each other
  - (C) Causes aromatics to combine with each other
  - (D) Is aimed at producing lubricating oil
- Answer: Option B

**200. Which is an anticaking compound?**

- (A) Amyl nitrate
  - (B) Alcohols
  - (C) Mercaptans
  - (D) Pyridine
- Answer: Option B

**201. Which of the following tests is not done for transformer oil?**

- (A) Flash point and acid value
  - (B) Aniline point
  - (C) Dielectric strength
  - (D) Copper strip corrosion test
- Answer: Option B

**202. Absolute vapor pressure of petrofuels is found by Reid bomb which is heated in water bath to 100°F. In Reid apparatus, the ratio of the volume of air chamber to that of the liquid fuel chamber is**

- (A) 4
- (B) 3
- (C) 2
- (D) 1

Answer: Option A

**203. In sweetening process, solutizer agent used with caustic alkali is**

- (A) Potassium isobutyrate
- (B) Sodium plumbite
- (C) Methanol
- (D) Phenol

Answer: Option A

**204. Waxy crudes are treated with chemical additives mainly to**

- (A) Depress its pour point
- (B) Dissolve wax
- (C) Precipitate wax
- (D) Remove wax

Answer: Option A

**205. Pick out the undesirable property for a solvent meant for dewaxing of lube oil.**

- (A) Complete miscibility with oil
- (B) High solubility of wax in the solvent
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: Option C

**206. Maximum use of petroleum coke is in**

- (A) Adsorption refining operation
- (B) Fuel gas manufacture
- (C) Carbon electrode manufacture
- (D) Iron ore reduction

Answer: Option C

**207. Older crude petroleum**

- (A) Is light and better
- (B) Gives more distillates
- (C) Gives less tar
- (D) All (A), (B) and (C)

Answer: Option B

**208. Crude oil is pumped by a \_\_\_\_\_ pump.**

- (A) Gear
- (B) Centrifugal
- (C) Screw
- (D) Reciprocating

Answer: Option B

**209. Pick out the wrong statement.**

- (A) Aromatics have higher specific gravity than paraffins
- (B) Gross calorific value (GCV) of petrofuels is equal to  $(12400 - 2100 \rho^2)$  where,  $\rho$  is the specific gravity of the fuel at 15.5°C
- (C) Heavier petrofuels have higher GCV on weight basis (i.e., Kcal/kg) but lower GCV on volume basis (i.e., Kcal/litre)
- (D) Higher specific gravity of petrofuels means higher C/H ratio

Answer: Option C

**210. Catalyst used in the isomerisation is**

- (A) Aluminium chloride
- (B) Alumina
- (C) Nickel
- (D) Phosphoric acid

Answer: Option A

**211. In petroleum refining, the process used for conversion of hydrocarbons to aromatics is**

- (A) Catalytic cracking
- (B) Catalytic reforming
- (C) Hydrotreating
- (D) Alkylation

Answer: Option B

**212. Which of the following hydrocarbons of same carbon atoms has minimum smoking tendency?**

- (A) Paraffins
- (B) Naphthenes
- (C) Aromatics
- (D) Iso-paraffins

Answer: Option A

**213. Naphtha yield in straight run distillation of crude oil may be about \_\_\_\_\_ percent.**

- (A) 2
- (B) 6
- (C) 12
- (D) 18

Answer: Option B

**214. \_\_\_\_\_ determination is not a very significant and important test for gasoline.**

- (A) Gum & sulphur content
- (B) Viscosity
- (C) Octane number
- (D) Reid vapor pressure

Answer: Option B



**215. Isomerisation converts the \_\_\_\_\_ tot-paraffins.**

- (A) Paraffins
- (B) Olefins
- (C) Naphthenes
- (D) None of these

Answer: Option A

**216. Natural gasoline is produced**

- (A) From oil wells
- (B) In oil refineries
- (C) By natural gas stripping
- (D) None of these

Answer: Option C

**217. The colour of gasoline is an indication of its**

- (A) Octane number
- (B) Lead susceptibility
- (C) Gum forming tendency & thoroughness of refining
- (D) None of these

Answer: Option C

**218. 95% (by volume) of LPG at 760 mm Hg pressure will evaporate at \_\_\_\_\_ °C.**

- (A) 2
- (B) -40
- (C) 30
- (D) 55

Answer: Option A

**219. Which of the following contains maximum sulphur?**

- (A) Diesel
- (B) Petrol
- (C) Kerosene
- (D) Fuel oil

Answer: Option D

**220. Which is the most undesirable component in kerosene?**

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

Answer: Option A

**221. Petroleum**

- (A) Is optically active
- (B) Constitutes mainly of olefins
- (C) Does not contain asphalt
- (D) Does not contain aromatics

Answer: Option A

**222. Aniline point of the diesel is a measure of its \_\_\_\_\_ content.**

- (A) Aromatic
- (B) Paraffin
- (C) Olefin
- (D) Naphthene

Answer: Option B

**223. \_\_\_\_\_ is not an important refinery process for upgrading the quality of lubricating oil.**

- (A) Deoiling
- (B) Solvent refining
- (C) Clay treatment
- (D) Hydro-treatment

Answer: Option A

**224. Which of the following has the highest gum forming tendency in gasoline?**

- (A) Paraffins
  - (B) Diolefins
  - (C) Aromatics
  - (D) Naphthenes
- Answer: Option B

**225. In case of liquid petrofuels, momentary combustion is observed at its**

- (A) Flash point
- (B) Preheating temperature corresponding to viscosity of 25 centistokes
- (C) Flame temperature
- (D) Fire point

Answer: Option A

**226. Operating condition in the electrical dehydrators for crude oil is about**

- (A) 6.5 kgf/Cm<sup>2</sup> & 95°C
- (B) 1 atm. & 110 °C
- (C) 20 kgf/cm<sup>2</sup> & 110°C
- (D) 50 atm. and 150°C

Answer: Option A

**227. Penetration test determines the \_\_\_\_\_ of the grease.**

- (A) Stiffness
- (B) Lubricating properties (e.g. oilness)
- (C) Service temperature
- (D) Variation in viscosity with temperature

Answer: Option A

**228. Which of the following has the maximum °API gravity of all?**

- (A) Diesel
- (B) Kerosene
- (C) Petrol
- (D) Furnace oil

Answer: Option C

**229. Catalyst used in catalytic reforming is**

- (A) Platinum on alumina
- (B) Nickel
- (C) Iron
- (D) Aluminium chloride

Answer: Option A

**230. Deoiling is the process of removal of oil from wax. It is done by the \_\_\_\_\_ process.**

- (A) Solvent extraction
- (B) Sweating
- (C) Resettling
- (D) All (A), (B) & (C)

Answer: Option D

**231. Which of the following processes consumes hydrogen?**

- (A) Fluid catalytic cracking
- (B) Visbreaking
- (C) Propane deasphalting
- (D) None of these

Answer: Option A

**232. In the atmospheric pressure crude distillation, the content of \_\_\_\_\_ from lighter fraction to heavier ones.**

- (A) Sulphur increases
- (B) Sulphur decreases
- (C) Nitrogen decreases
- (D) None of these

Answer: Option A

**233. Which of the following has the highest octane number?**

- (A) Aromatics

- (B) *i*-paraffins
  - (C) Naphthenes
  - (D) Olefins
- Answer: Option A

**234. Crude petroleum oil is a \_\_\_\_\_ fuel.**

- (A) Primary
  - (B) Fossil
  - (C) Both (A) & (B)
  - (D) Secondary
- Answer: Option C

**235. Furfural solvent extraction is used for upgrading (by dissolving aromatics)**

- (A) Naphtha
  - (B) Lubricating oils
  - (C) Wax
  - (D) Cracking feedstock
- Answer: Option B

**236. Specific gravity of a petroleum product gives an indication of its**

- (A) Degree of refinement
  - (B) Hydrocarbon content type (aromatic or paraffinic)
  - (C) Ease of atomisation
  - (D) Sulphur content
- Answer: Option B

**237. Boiling range of motor gasoline is an indication of the**

- (A) Case of starting
  - (B) Rate of acceleration
  - (C) Vapour locking tendency
  - (D) All (A), (B) and (C)
- Answer: Option B

**238. Solvent used in duo-sol extraction for lube oil upgradation is a mixture of**

- (A) Propane & phenol-cresol mixture
  - (B) Methyl ethyl ketone & glycol
  - (C) Phenol & furfural
  - (D) Propane & liquid sulphur dioxide
- Answer: Option A

**239. Cetane number of high speed diesel must be  $\geq$**

- (A) 30
  - (B) 45
  - (C) 75
  - (D) 95
- Answer: Option B

**240. Name the endothermic reaction out of the following:**

- (A) Catalytic cracking
  - (B) Hydrocracking
  - (C) Dehydrogenation of Naphthene to produce aromatic
  - (D) Catalytic polymerisation
- Answer: Option C

**241. Solvent used in the deasphalting process is**

- (A) Furfural
  - (B) Phenol
  - (C) Propane
  - (D) Hexane
- Answer: Option C

**242. Operating temperature and pressure in catalytic reforming is about**

- (A) 1-5 Kgf/cm<sup>2</sup> & 200°C
- (B) 15-45 Kgf/cm<sup>2</sup> & 450-550°C
- (C) 50 - 75 kgf/cm<sup>2</sup> & 600 - 800°C

(D) 5-10 kgf/cm<sup>2</sup> & 150 - 250°C

Answer: Option B

**243. In solutizer sweetening process, solutizer solution used is**

- (A) Methanol in Unisol process
- (B) Naphthenic acid in Mercapsol process
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: Option C

**244. Which of the following has the lowest viscosity (at a given temperature) of all?**

- (A) Naphtha
- (B) Kerosene
- (C) Diesel
- (D) Lube oil

Answer: Option A

**245. A petroleum well is called 'dry', if it contains**

- (A) Very little oil
- (B) No natural gas
- (C) Only natural gas
- (D) All (A), (B) and (C)

Answer: Option C

**246. Presence of sulphur in gasoline**

- (A) Leads to corrosion
- (B) Increases lead susceptibility
- (C) Decreases gum formation
- (D) Helps during stabilisation

Answer: Option A

**247. \_\_\_\_\_ converts n-paraffins to i-paraffins.**

- (A) Alkylation
- (B) Polymerisation
- (C) Isomerisation
- (D) None of these

Answer: Option C

**248. Higher viscosity of lubricating oil usually signifies**

- (A) Lower Reid vapour pressure
- (B) Higher acid number
- (C) Higher flash point and fire point
- (D) Lower flash point and fire point

Answer: Option C

**249. Both asphalt and wax are produced by \_\_\_\_\_ base crude oils.**

- (A) Naphthenic
- (B) Asphalt
- (C) Paraffin
- (D) Mixed

Answer: Option D

**250. Which of the following fractions of a crude oil will have the maximum gravity API (i.e. °API)?**

- (A) Diesel
- (B) Gasoline
- (C) Atmospheric gas oil
- (D) Vacuum gas oil

Answer: Option C

**251. Fuel oil is subjected to visbreaking to reduce its**

- (A) Pour point
- (B) Viscosity
- (C) Pressure drop on pumping
- (D) All (A), (B) and (C)

Answer: Option D

**252. Pick out the wrong statement.**

- (A) Multigrade lubricating oils have high viscosity index
- (B) Paraffinic oil has very high viscosity index
- (C) Naphthenic oil has very low viscosity index
- (D) High viscosity index means a large change in viscosity with change in temperature

Answer: Option D

**253. Viscosity index of a lubricating oil**

- (A) Is the measure of its flash point
- (B) Is the measure of variation of viscosity with temperature
- (C) Should be low
- (D) None of these

Answer: Option B

**254. Smoke volatility index is equal to smoke point plus**

- (A)  $0.42 \times (\% \text{ distilled at } 204^\circ\text{C})$
- (B) 5 mm
- (C)  $0.84 \times (\% \text{ distilled at } 204^\circ\text{C})$
- (D) 10 mm approximately

Answer: Option A

**255. 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

Answer: Option B

**256. Diesel index (an alternative index for expressing the quality of diesel) is**

- (A) Determined by using a test engine
- (B) Not related to aniline point
- (C) Equal to cetane number plus 3
- (D) All (A), (B) & (C)

Answer: Option C

**257. Choose the correct statement.**

- (A) Octane number of i-octane is zero
- (B) Octane number of paraffins increases with increasing number of carbon atoms
- (C) Branched chain paraffins have higher octane number than straight chain paraffins with same number of carbon atoms
- (D) The aromatics have lower octane number than naphthenes with same number of carbon atoms

Answer: Option A

**258. Pick out the correct statement.**

- (A) Paraffins have higher octane number than corresponding iso-paraffin
- (B) Paraffins have lower smoke point than aromatics
- (C) Suitability of kerosene as a fuel & as an illuminant may be determined by char value test
- (D) Aviation fuel should have very high cloud point

Answer: Option B

**259. Flash point of motor gasoline may be around \_\_\_\_\_ °C.**

- (A) 10
- (B) 45
- (C) 100
- (D) 150

Answer: Option B

**260. Catalyst used in the catalytic cracking is**

- (A) Silica-alumina
- (B) Silica gel
- (C) Vanadium pentoxide
- (D) Nickel

Answer: Option A

**261. High aniline point of diesel indicates that, it**

- (A) Is highly aromatic
- (B) Has a large ignition delay
- (C) Is highly paraffinic
- (D) Has a low diesel index

Answer: Option C

**262. For gasoline, the flash point (<50°C) is determined by the**

- (A) Abel apparatus
- (B) Pensky-Martens apparatus
- (C) Saybolt chromometer
- (D) None of these

Answer: Option D

**263. Which of the following has the lowest flash point of all?**

- (A) Diesel
- (B) Kerosene
- (C) Petrol
- (D) Furnace oil

Answer: Option C

**264. Main constituent of natural gas is**

- (A) CH<sub>4</sub>
- (B) C<sub>2</sub>H<sub>2</sub>
- (C) C<sub>2</sub>H<sub>4</sub>
- (D) C<sub>2</sub>H<sub>6</sub>

Answer: Option A

**265. Complete removal of \_\_\_\_\_ from gasoline is done by Unisol process using caustic soda and methyl alcohol.**

- (A) Waxes
- (B) Mercaptans
- (C) Asphalt
- (D) Diolefins

Answer: Option B

**266. Crude oil is subjected to vacuum distillation in the last stage, because**

- (A) High boiling point products like heavy fuel oil & lubricating oils are heat sensitive and may decompose
- (B) Lighter/low boiling products are prone to thermal decomposition
- (C) High purity products can be obtained thereby
- (D) None of these

Answer: Option A

**267. Crude oil produced by Indian oil fields are predominantly \_\_\_\_\_ in nature.**

- (A) Paraffinic
- (B) Naphthenic
- (C) Asphaltic
- (D) Mixed base

Answer: Option C

**268. Mercaptans are**

- (A) Low boiling sulphur compounds
- (B) Added in LPG cylinders to detect gas leakage by its smell
- (C) Undesirable in petrol, as they reduce its octane number
- (D) All (A), (B) and (C)

Answer: Option D

**269. Pressure maintained in the high pressure primary tower of a three stage crude oil distillation system is about \_\_\_\_\_ kg/cm<sup>2</sup>.**

- (A) 1.5
- (B) 3
- (C) 6
- (D) 12

Answer: Option B

**270. Which of the following additives improves the cetane number of diesel?**

- (A) Amyl nitrate
- (B) Ethyl mercaptan
- (C) Naphthenic acid
- (D) Tetra ethyl lead

Answer: Option B

**271. Illuminating characteristics of kerosene is expressed by its**

- (A) Smoke point
- (B) Aniline point
- (C) Luminosity number
- (D) Aromatic content

Answer: Option C

**272. Aniline point test of an oil qualitatively indicates the \_\_\_\_\_ content of an oil.**

- (A) Paraffin
- (B) Olefin
- (C) Aromatic
- (D) Naphthene

Answer: Option C

**273. 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

Answer: Option B

**274. Pour point and freezing point is equal for**

- (A) Petrol
- (B) Diesel
- (C) Water
- (D) Crude petroleum

Answer: Option C

**275. In Hydrofining catalytic desulphurisation process for sweetening of petroleum products, use of hydrogen**

- (A) Enhances the desulphurisation process
- (B) Minimises coke formation
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: Option C

**276. Hydrogen content in petroleum products varies from 12 to 15% (by weight). As a result the difference between gross and net heating value of petroleum fuels varies in the range of \_\_\_\_\_ kcal/kg.**

- (A) 600-750
- (B) 250-350
- (C) 1000-1500
- (D) 2000-2500

Answer: Option A

**277. Octane number of gasoline is a measure of its**

- (A) Resistance to knock
- (B) Ignition delay
- (C) Ignition temperature
- (D) Smoke point

Answer: Option A

**278. The characterisation factor of a crude oil is calculated as 12.5. It means that; it is**

- (A) Paraffinic
- (B) Naphthenic
- (C) Intermediate

(D) None of these  
Answer: Option A

**279. Crude oils containing more than \_\_\_\_\_ kg of total salts (expressed in terms of NaCl) per thousand barrel is called a 'salty crude'.**

- (A) 1
- (B) 5
- (C) 15
- (D) 25

Answer: Option B

**280. Solution used in Doctor's treatment for the removal of mercaptans is**

- (A) Sodium hydroxide
- (B) Sodium plumbite
- (C) Cupric chloride
- (D) Potassium isobutyrate

Answer: Option B

**281. The most commonly used feed stock for the reforming reactor is**

- (A) Heavy fuel oil
- (B) Residuum
- (C) Straight run gasoline
- (D) Casing head gasoline

Answer: Option C

**282. Solvent used in the Udex (glycol) extraction process for removal of light aromatics from cracked naphtha is**

- (A) Propane
- (B) Diethylene glycol
- (C) Aqueous solution (10% water) of diethylene glycol
- (D) Methyl ethyl ketone (MEK)

Answer: Option C

**283. Smoke point of a test sample of kerosene is found to be 15 mm. On removal of \_\_\_\_\_ from it, the smoke point rises to 25 mm.**

- (A) *n*-paraffins
- (B) Olefins
- (C) Aromatics
- (D) None of these

Answer: Option C

**284. Straight run petrol as compared to methyl/ethyl alcohol has**

- (A) Lower calorific value
- (B) Lower octane number
- (C) Higher specific gravity
- (D) Higher ignition temperature

Answer: Option B

**285. Raw Kerosene has a smoke point of 15 mm. After it is subjected to dearomatization by liquid SO<sub>2</sub> extraction (Edeleanu process), its smoke point may become \_\_\_\_\_ mm.**

- (A) 5
- (B) 10
- (C) 25
- (D) 100

Answer: Option C

**286. \_\_\_\_\_ test is done to find out the softening point of bitumen.**

- (A) Impact
- (B) Ball and ring
- (C) Flame
- (D) Viscosity

Answer: Option B

**287. Aniline point is the**

- (A) Characteristic property of diesel & lubricating oils



- (B) Measure of aromatic content of oil
  - (C) Both (A) and (B)
  - (D) Neither (A) nor (B)
- Answer: Option C

**288. In catalytic cracking process, olefins crack \_\_\_\_\_ times faster than in thermal cracking process.**

- (A) 100
- (B) 200-300
- (C) 1000-10000
- (D) 10

Answer: Option C

**289. Which of the following is used as a catalyst in fluidised bed catalytic cracking?**

- (A) Silica-magnesia
- (B) Silica-alumina
- (C) Bentonite clays
- (D) All (A), (B) and (C)

Answer: Option D

**290. Which of the following processes in oil refinery does not employ 'cracking'?**

- (A) Coking
- (B) Visbreaking
- (C) Pyrolysis
- (D) None of these

Answer: Option D

**291. Research octane number refers to the**

- (A) Low octane number motor fuels
- (B) High octane number motor fuels
- (C) High octane number aviation fuels
- (D) Unleaded motor fuels

Answer: Option D

**292. Catalytic desulphurisation process used for sweetening of straight run gasoline and kerosene uses \_\_\_\_\_ as catalyst.**

- (A) Bauxite
- (B) Fuller's earth
- (C) Activated clay
- (D) All (A), (B) & (C)

Answer: Option D

**293. Mercaptans are added to liquefied petroleum gas (LPG) to**

- (A) Reduce its cost
- (B) Narrow down its explosion limit
- (C) Assist in checking its leakage from cylinder
- (D) Increase its calorific value

Answer: Option C

**294. Diesel index is defined as**

- (A)  $(^\circ\text{API}) \times (\text{Aniline Point, } ^\circ\text{F})/100$
- (B)  $(^\circ\text{API}) \times (\text{Aniline Point, } ^\circ\text{C})/100$
- (C)  $(^\circ\text{API}) \times (100)/\text{Aniline Point, } ^\circ\text{F}$
- (D)  $(^\circ\text{API}) \times (100)/\text{Aniline Point, } ^\circ\text{C}$

Answer: Option A

**295. Visbreaking process is used mainly for making**

- (A) High cetane diesel
- (B) High octane gasoline
- (C) Fuel oil
- (D) Smoke free kerosene

Answer: Option C

**296. Carbon/hydrogen ratio (by weight) is maximum (out of following) for**

- (A) Gasoline

- (B) Kerosene
  - (C) Light gas oil
  - (D) Heavy fuel oil
- Answer: Option A

**297. Pick out the correct statement about catalytic polymerisation.**

- (A)  $\text{H}_2\text{SO}_4$  polymerisation process gives gasoline rich in unsaturates
  - (B) In  $\text{H}_2\text{SO}_4$  polymerisation,  $\text{H}_3\text{PO}_4$  is always used with 2% steam to prevent meta & ortho  $\text{H}_3\text{PO}_4$  formation, which are inactive
  - (C) Both (A) and (B)
  - (D) Neither (A) nor (B)
- Answer: Option B

**298. Stabilisation of gasoline (petrol) means**

- (A) Removal of dissolved gases from it
  - (B) Increasing its oxidation stability
  - (C) Improving its lead susceptibility
  - (D) Increasing its vapour pressure
- Answer: Option A

**299. With increase in density, the viscosity of petroleum products**

- (A) Increases
  - (B) Decreases
  - (C) Remain same
  - (D) Either (A) or (B)
- Answer: Option A

**300. Naphthenic acid is represented by**

- (A)  $\text{C}_n\text{H}_{2n+2}\text{O}_2$
  - (B)  $\text{C}_n\text{H}_{2n-2}\text{O}_2$
  - (C)  $\text{C}_n\text{H}_{2n+2}\text{O}_2$  ( $n \geq 6$ )
  - (D)  $\text{C}_n\text{H}_{2n+6}\text{O}_2$  ( $n \leq 6$ )
- Answer: Option B

**301. Cetane number of diesel used in trucks may be about**

- (A) 50
  - (B) 14
  - (C) 35
  - (D) 85
- Answer: Option A

**302. Bottom product of atmospheric pressure crude oil distillation column is termed as**

- (A) Reduced crude
  - (B) Heavy ends
  - (C) Asphalt
  - (D) Residuum
- Answer: Option A

**303. Choose the correct statement.**

- (A) Coking tendency increases with increasing molecular weight
  - (B) Coking tendency decreases with increasing molecular weight
  - (C) Higher pressure enhances coke formation
  - (D) Coking is an exothermic reaction
- Answer: Option A

**304. Smoke point of kerosene expresses its**

- (A) Burning characteristics
  - (B) Luminosity characteristics
  - (C) Aromatic content directly
  - (D) Lamp wick wetting characteristics
- Answer: Option A

**305. Which one of the following processes aims at producing higher yield of gaseous unsaturated hydrocarbons and aromatics like benzene & toluene?**

- (A) Reforming

- (B) Pyrolysis
  - (C) Alkylation
  - (D) Hydrocracking
- Answer: Option A

**306. Liquefied petroleum Gas (LPG) used for the household cooking comprises mainly of**

- (A) Propane & butane
- (B) Butane & ethane
- (C) Methane & ethane
- (D) Methane & carbon monoxide

Answer: Option A

**307. Reid vapour pressure of gasoline is the measure of its**

- (A) Pour point
- (B) Cloud point
- (C) Vapour locking tendency
- (D) Carbon residue

Answer: Option C

**308. Removal of light fractions from crude oil is called its**

- (A) Sweetening
- (B) Dehydration
- (C) Stabilisation
- (D) Visbreaking

Answer: Option C

**309. Solvent used in Edeleanu process is**

- (A) Furfural
- (B) Propane
- (C) Liquid SO<sub>2</sub>
- (D) Phenol

Answer: Option C

**310. Which of the following is used as a solvent in deasphalting of petroleum products?**

- (A) Furfural
- (B) Propane
- (C) Methyl ethyl ketone
- (D) Liquid sulphur dioxide

Answer: Option B

**311. In catalytic alkylation, higher iso-butane to olefin ratio gives**

- (A) Low final boiling point product
- (B) Higher yield
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: Option A

**312. The catalytic cracking of heavier petroleum fraction is done to produce mainly**

- (A) Gasoline
- (B) Asphalt
- (C) Diesel oil
- (D) Tar

Answer: Option C

**313. The condensate obtained on compression of wet natural gas is termed as**

- (A) Liquefied natural gasoline
- (B) Natural gasoline
- (C) Liquid natural gas
- (D) None of these

Answer: Option B

**314. Hydrofining is the most recent and effective method for the**

- (A) Removal of sulphur
- (B) Improvement of smoke point
- (C) Reduction of breathing loss

(D) Improvement of viscosity index

Answer: Option A

**315. Which of the following is the most suitable feed for platforming process (reforming)?**

(A) Olefinic hydrocarbon

(B) Naphtha

(C) Fuel oil

(D) Atmospheric residue

Answer: Option A

**316. Which is the most desirable component of a good quality kerosene?**

(A) *i*-paraffins

(B) Aromatics

(C) *n*-paraffins

(D) Naphthenes

Answer: Option C

**317. Which one is preferred for aircraft engine?**

(A) High viscosity index lube oil

(B) Low viscosity index lube oil

(C) High freezing point aviation fuel

(D) None of these

Answer: Option A

**318. Petroleum is believed to have originated from \_\_\_\_\_ sources.**

(A) Vegetable

(B) Animal

(C) Both (A) and (B)

(D) Neither (A) nor (B)

Answer: Option C

**319. Octane numbers of motor gasoline used in India and America are respectively**

(A) 87 & 94

(B) 94 & 87

(C) 94 & 100

(D) 83 & 100

Answer: Option A

**320. The yield of straight run LPG from crude oil is about \_\_\_\_\_ weight percent.**

(A) 20-25

(B) 1-1.5

(C) 10-15

(D) 0.1-0.2

Answer: Option B

**321. Petroleum coke is used mainly in the**

(A) Discoloration of yellow glycerine

(B) Sugar refining

(C) Manufacture of carbon electrode

(D) Blast furnace for reduction of iron ore

Answer: Option C

**322. LSHS is a type of furnace oil, which**

(A) Is more viscous than high viscosity furnace oil (HVFO)

(B) Stands for low sulphur heavy stock

(C) Is an ideal fuel for metallurgical furnaces due to its lower sulphur content (< 1%)

(D) All (A), (B) and (C)

Answer: Option D

**323. Performance number of a liquid fuel is related to its**

(A) Wax content

(B) Spontaneous ignition temperature

(C) Knocking tendency

(D) Sulphur content

Answer: Option B