

GOVERNMENT ZIRTIRI RESIDENTIAL SCIENCE COLLEGE

Subject: Geology

Paper name: Fuel Geology & Mineral Exploration

Paper No: XXIII

Semester: 6th semester

1. What is the primary component of crude oil?
 - a) Sulfur
 - b) Carbon
 - c) Hydrogen
 - d) Nitrogen

2. How is crude oil separated?
 - a) Crystallization
 - b) Fractional distillation
 - c) Decantation
 - d) Sublimation

3. What type of gas is LPG?
 - a) Gasoline
 - b) Kerosene
 - c) Uncondensed
 - d) Heavy oil

4. What is the boiling temperature of petrol?
 - a) 40-120°C
 - b) 120-180°C
 - c) 180-250°C
 - d) 250-320°C

5. Which fuel/oil is used for obtaining gasoline?
 - a) Kerosene
 - b) Diesel
 - c) Heavy
 - d) Naphtha

6. Which of the following is not used as a lubricant?
 - a) Lubricating oil
 - b) Grease
 - c) Asphalt
 - d) Petroleum jelly

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7. What is the function of petroleum coke?
 - a) Lubrication
 - b) In candles
 - c) As fuel
 - d) As solvent

8. Carbon black and hydrogen can be manufactured using _____
 - a) Natural gas
 - b) Coal gas
 - c) Oil gas
 - d) Water gas

9. Coal gas is attained from to a process carried out at _____
 - a) 300°C
 - b) 700°C
 - c) 900°C
 - d) 1300°C

10. Oil gas is obtaining by the cracking of _____
 - a) Kerosene oil
 - b) Diesel oil
 - c) Heavy oil
 - d) Gasoline

11. Which of these gases is used for heating open-hearth furnaces?
 - a) Oil gas
 - b) Producer gas
 - c) Biogas
 - d) Water gas

12. A process of production of water gas is carried out at _____
 - a) 140-200°C
 - b) 200-400°C
 - c) 650-750°C
 - d) 900-1000°C

13. How is biogas prepared?
 - a) Decantation
 - b) Filtration
 - c) Fermentation
 - d) Sublimation

14. The brown coal is
 - a) Lignite
 - b) Magnesite
 - c) Bitumen

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- d) None
15. take place in the presence of air
- a) Combustion
 - b) Decomposition
 - c) Neutralisation
 - d) None
16. Substances that burn in air to give heat energy are called
- a) Minerals
 - b) Fuels
 - c) Energy
 - d) None
17. India ranks among the coal producing countries
- a) 2nd
 - b) 3rd
 - c) 4th
 - d) None
18. How do the non-coking coals are subjected to consumers in India?
- a) By washing
 - b) By sizing
 - c) By sorting
 - d) By blending
19. How is the sizing of coal processed?
- a) By the use of measuring instruments
 - b) By the use of computer software
 - c) By crushing and screening
 - d) By the mass of the coal
20. By which process does the impurities of coal are generally removed?
- a) Screening process
 - b) Sorting
 - c) Blending
 - d) Wet washing
21. Which of the following is used for the removal of impurities by heavy media separation in industries?
- a) Magnetite
 - b) Zinc chloride
 - c) Bromoform
 - d) Carbon Tetrachloride
22. For coarse fractions of dewatering of coal, which of the following process is used?
- a) Filtration

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- b) Thickening
 - c) Flocculation
 - d) Centrifugation
23. Froth flotation process is used for _____
- a) Screening of coal
 - b) Beneficiation of coal
 - c) Dewatering of coal
 - d) Mining of coal
24. Which of the following is not an advantage of the cleaning of coal?
- a) It increases the cost of the coal
 - b) It increases the efficiency of coal
 - c) It removes the impurities like phosphorous and sulphur
 - d) It reduces its ash content
25. What is the main purpose for a blending of coal?
- a) To produce more amount of coal
 - b) To produce good quality of coal
 - c) To decrease the cost of coal
 - d) To produce different types of coal at same time
26. Which of the following is a disadvantage of storing coal for a long period of time?
- a) Increase in the friability of coal
 - b) Decrease in its ignition temperature
 - c) Increase in its calorific value
 - d) Increase in the proportion of fine
27. How do the chances of spontaneous combustion of coal can decrease?
- a) Decrease in the maturity of coal
 - b) By washing the coal time to time
 - c) Increase in the maturity of coal
 - d) By the reducing the quantity of coal
28. Which of the following operation, we can't perform on drilling machine?
- a) reaming
 - b) tapping
 - c) lapping
 - d) none of the mentioned
29. Tapping attachment is included in _____ method of tool holding devices.
- a) by chucks
 - b) by a sleeve
 - c) by directly fitting in the spindle
 - d) none of the mentioned

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30. Floating holder is included in _____ method of tool holding devices.
- by directly fitting in the spindle
 - by special attachments
 - by a socket
 - none of the mentioned
31. Which of the following method is not used for holding tool?
- by a sleeve
 - by chucks
 - by a socket
 - none of the mentioned
32. We can't perform grinding operation in a drilling machine.
- true
 - false
33. Which of the following device is not used for holding the work in a drilling machine?
- step block
 - drill jigs
 - both step block and drill jigs
 - none of the mentioned
34. In drilling operation, work should be held by hand.
- true
 - false
35. The drilling machine is the second most important machine tool in a workshop.
- true
 - false
36. The drilling machine was primarily designed to originate a _____
- flat surface
 - cylindrical surface
 - taper surface
 - none of the mentioned
37. For drilling operation, the drill rotates with _____ pressure if job is held on earth.
- upward
 - downward
 - 45 degree inclined to both planes
 - none of the mentioned
38. Sensitive High Resolution ion probe (SHRIP) is a:
- Age Ending method by Zircon crystal
 - Type of remote sensing survey.
 - Type of film used for remote sensing survey.
 - Type of mineral exploration method.

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39. In a series of coal seams the fixed carbon increases and the volatile matter decreases with depth are known as:
- (a) Hit's rule
 - (b) Bode's rule
 - (c) Clarke's rule
 - (d) Michaud's rule.
40. Methane is the more abundantly found in the natural gas because:
- (a) It is the most unstable hydrocarbon
 - (b) It is the most stable hydrocarbon
 - (c) It is found at a greater depth
 - (d) It is soluble.
41. Long -term changes in the geochemical cycle are known as :
- (a) Periodic changes
 - (b) Permanent changes
 - (c) Secular changes
 - (d) Perennial changes.
42. Hydrogen is converted to helium in the sun this nuclear reaction produces :
- (a) Solar radiation
 - (b) Potential energy
 - (c) Kinetic energy
 - (d) Radiation energy
43. Elements which readily-form ions with an outermost 8-electron shell are:
- (a) Siderophile
 - (b) Chaleophile
 - (c) Lithophile
 - (d) Atmosphere
44. The mineral formed 'from the products of chemical decomposition are generally:
- (a) Oxide compounds
 - (b) Silicates
 - (c) Carbonates
 - (d) Hydrates compounds.
45. Hydrolysis or a solution is a/an:
- (a) Substitute reaction between water ions and salt ions.
 - (b) Substitute reaction between precipitate and solvents.
 - (c) Exchange reaction between precipitates and water ions.
 - (d) Exchange reaction between water ions and salt ions.

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46. Peat formation involves:
- (a) Rapid decomposition of water soluble substances.
 - (b) Slow decomposition of the cellulose compounds.
 - (c) Gradual accumulation of the cell substance of the microorganisms
 - (d) All the above.
47. What is saprobe?
- (a) It is the product of the organic matter decomposed by the action of anaerobic bacteria.
 - (b) It is black in colour
 - (c) Example of the saprobe is black sea.
 - (d) All the above.
48. Geochemical processes operate only because of:
- (a) Presence of various chemical on the earth's crust.
 - (b) Water circulation system.
 - (c) A flow of energy from a higher to a lower potential or intensify.
 - (d) High pressure in the crust.
49. Find the odd ones out
- a) telluric method
 - b) gravity method
 - c) magnetic method
 - d) resistivity method
50. The Bouguer anomaly over an isostatically compensated region is
- a) Zero
 - b) Positive
 - c) Negative
 - d) same as isostatic anomaly
 - e)
51. Hammer's chart is used for
- a) free air correction for gravity
 - b) gravity interpretation
 - c) resistivity data interpretation
 - d) terrain correction
52. The maximum amplitude and variation in acceleration due to gravity due to tidal effect is
- a) 0.3 gal
 - b) 0.03 gal
 - c) 0.3 mgal
 - d) 0.03 mgal
53. Which exploration data has Milligals as unit

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- a) Magnetic
 - b) Radioactive
 - c) Seismic
 - d) gravity
54. Which deposits can be explored by gravity survey
- a) Gold
 - b) Chromite
 - c) Bauxite
 - d) graphite
55. Which one has the highest resistivity
- a) sandstone
 - b) fresh water
 - c) sea water
 - d) sea ice
56. Which of the following logging method is not used to determine porosity
- a) Sonic
 - b) SP
 - c) Neutron
 - d) gamma-gamma
57. Electromagnetoc surveys are carried out at frequencies
- a) above 100KHz
 - b) below 50KHz
 - c) below 60KHz
 - d) above 80KHz
58. In which one of the following configuration the electrode are uniformly spaced
- a) Schlumberger array
 - b) Pole-dipole array
 - c) Wenner array
 - d) Pole-pole array
59. The physical properties used in magnetic prospecting is
- a) magnetic induction
 - b) magnetic permeability
 - c) magnetic susceptibility
 - d) magnetic potential
60. Magnetic anomaly at the crest of MOR is
- a) Positive
 - b) Negative
 - c) varies from positive to negative
 - d) zero

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61. The magnitude of SP anomaly over a massive ore body is
- a) a few millivolts
 - b) a few tens of millivolts
 - c) a few hundreds of millivolts
 - d) a few volts
62. The unit of flux density is
- a) Tesla
 - b) Newton
 - c) Coulomb
 - d) N/m
63. The unit of magnetic intensity is equivalent to
- a) 1 Gauss
 - b) 10 Gauss
 - c) 1.2 Gauss
 - d) 0.6 Gauss
64. A pathfinder element for gold is
- a) Al
 - b) As
 - c) Cu
 - d) Bi
65. Porosity is determined by ____ log
- a) Normal
 - b) Lateral
 - c) Micro
 - d) Density
66. Which law is used for permeability determination
- a) Stoke's law
 - b) Snell's law
 - c) Tacob'equation
 - d) Darcy's law
67. Increase in API gravity of oil in a reservoir, the seismic wave velocity
- a) Increase
 - b) Decrease
 - c) Constant
 - d) Varies erratically
68. Which of the following rock is the most compatible
- a) Sandstone

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- b) Shale
 - c) Conglomerate
 - d) Limestone
69. The logging tool for direct determination of permeability is
- a) Induction
 - b) Gamma
 - c) Sonic
 - d) NMR
70. The logging technique used for non-destructive drilling fluid is ____ logging
- a) Sp
 - b) Resistivity
 - c) Induction
 - d) Radiometric
71. Choose the odd ones out
- a) Sp
 - b) Neutron
 - c) Sonic
 - d) Gamma-gamma
72. Snell's law of refraction deals with
- a) Amplitude
 - b) Direction
 - c) Energy
 - d) Phase
73. Sonic log is for determination of
- a) Sea surface variations
 - b) Surface cavity
 - c) Compensating network
 - d) Total magnetic field
74. Gamma ray log measurements are used to quantify
- a) Hydrocarbon saturation
 - b) Porosity of the formation
 - c) Density of the formation
 - d) Volume of shale in the formation
75. The unit of magnetic flux density is equivalent to
- a) 10 Oe
 - b) 104 Oe
 - c) 1 gamma
 - d) 10 gamma

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B. Fill in the blanks

1. ____ coal is another name for lignite
2. Parrot coal is a variety of ____ coal
3. Neyvelli lignite deposits are of ____
4. Best coking coal is obtained from ____ coal fields
5. Sulphur exist in coal as ____, sulphate and organic form
6. ____ are microscopic constituents of coal
7. Coal is an ____ rock
8. Coke consist of ____ and ash
9. Lower Gondwana are well known for their ____ and cyclothem
10. ____ exploration data has Miller as unit
11. The unit of flux density is ____
12. The Bouguer anomaly over the continent is generally ____
13. In gravity prospecting, gravity value is usually expressed in units of
14. The value of g is minimum at ____
15. The Bouguer anomaly over an isostatically compensated region is ____

Key Answers

A. Multiple choice questions

- | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|
| 1. b) | 2. b) | 3. c) | 4.b) | 5. c) | 6.c) | 7. c) |
| 8. a) | 9. d) | 10. a) | 11. b) | 12. d) | 13. c) | 14. a) |
| 15. a) | 16. b) | 17. b) | 18. b) | 19. c) | 20. d) | 21. a) |
| 22. d) | 23. b) | 24. a) | 25. b) | 26. d) | 27. c) | 28. d) |
| 29. d) | 30. b) | 31. d) | 32. b) | 33. d) | 34. b) | 35. a) |
| 36. d) | 37. b) | 38. a) | 39. a) | 40. b) | 41. c) | 42. a) |
| 43. c) | 44. d) | 45. d) | 46. d) | 47. d) | 48. c) | 49. d) |
| 50. c) | 51. d) | 52. c) | 53. d) | 54. b) | 55. a) | 56. b) |
| 57. b) | 58. c) | 59. d) | 60. a) | 61. c) | 62. a) | 63. c) |

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63. b) 65. d) 66. d) 67. b) 68. d) 68. d) 70. c)
71. a) 72. b) 73. b) 74. d) 75. d

B.

1. Brown
2. Bituminous
3. Miocene age
4. Jharia
5. Pyrite
6. Macerals
7. Heterogenous
8. Fix carbon
9. Coal
10. Gravity
11. Tesla
12. Negative
13. mGal
14. equator
15. negative