13611 120 MINUTES

1. At what depth the MOHO is present along the Indian peninsular shield?
   A) 10-20 km B) 30-40 km
   C) 50-60 km D) 70-80 km

2. Which of the following is NOT an evidence of past glaciation?
   A) Cirque B) U-shaped valley
   C) Hanging valley D) Knick points

3. Which of the following gives drainage density?
   A) Number of streams per unit area
   B) Length of streams per unit area
   C) Number of 1st order streams per sq.km.
   D) Ratio of stream-length to number

4. Which type of coast is due to sea-level rise?
   A) Emergent B) Submergent
   C) Static D) Compound

5. Which remote sensing tool is best suited for detecting and delineating water bodies?
   A) Microwave B) Thermal
   C) Reflected IR D) UV

6. Which of the following GIS techniques will settle the mismatch of river courses orroads between adjacent map sheets?
   A) Rubber sheeting B) Edge matching
   C) Georeferencing D) Coordinate conversion

7. Which of the following is not a spatial data?
   A) A small river course B) Drainage divide
   C) Location of a bore-hole D) Absolute age of the rock

8. At what altitude the GPS satellites encircle the Earth?
   A) 10100 km B) 20200 km
   C) 30300 km D) 40400 km

9. The horizontal component of displacement in a dip-slip fault is termed:
   A) Hade B) Throw C) Heave D) Rake

10. What is the condition for forming a strike-slip fault?
    A) $\sigma 1$ horizontal B) $\sigma 1$ vertical
    C) $\sigma 2$ vertical D) $\sigma 2$ horizontal

11. What is the term used to denote lines joining points of equal limb-dip in successive layers through the fold profile ?
A) Stratum contours B) Strike lines
C) Dip isogons D) Dip lines

12. Chocolate-tablet structure is a variety of:
A) Boudinage
B) Ductile shear
C) Primary sedimentary structure
D) Fold interference pattern

13. The SanAndreas fault is a kind of:
A) Dextral strike-slip B) Sinistral strike-slip
C) Thrust D) Normal

14. Which of the following folds resembles kink bands?
A) Similar B) Dissimilar
C) Concentric D) Chevron

15. The addition of an extensional component across a shear zone produces:
A) Transtension B) Transpression
C) Transcurrent D) Transform

16. What is the main process of generation of continental crust?
A) Magmatism at mid-ocean ridge
B) Collision at orogens
C) Accretion at convergent plate boundaries
D) Impact of extra-terrestrial objects

17. Which of the following fossil fuels occurs in solid form?
A) Coal bed methane B) Petroleum
C) Gas hydrate D) Natural gas

18. At what depth beneath an island arc cana subducting plate be encountered?
A) 100 km B) 200 km C) 300 km D) 400 km

19. Which of the following paleomagneticchrons coincides with the K-T boundary?
A) C 29 R B) C 33 R C) C 13 N D) C 24 N

20. On which type of plate boundary, Iceland is located?
A) Divergent B) Convergent
C) Transform fault D) Collision

21. When did the Pangea brake-up take place?
A) Late Paleozoic B) Early Paleozoic
C) Late Proterozoic D) Early Proterozoic

22. Which of the following forms the dominant component of ChitradurgaSchist belt?
A) Charnockite B) Khondalite
C) Metabasalt D) Eclogite

23. Which of the following is the youngest?
A) Proterozoic B) Paleozoic
C) Paleogene D) Neogene

24. To which age the term "Puranas" in Indian geology corresponds to?
A) Paleozoic B) Proterozoic
C) Archean D) Precambrian

25. Which of the following represents largest time span?
A) Era B) Eon C) Epoch D) Chron

26. Which of the following schist belts is the youngest?
A) Dharwar B) Sargur
C) Wynad D) Sathyamangalam

27. Which among the following is the youngest?
A) Nallamalai series B) Semri series
C) Chikkim series D) Umia series

28. Which of the following has abundant mammalian fossils?
A) Vindhyans B) Kurnools
C) Gondwanas D) Siwaliks

29. Which is the type area for the Cambrian?
A) North Wales B) South Wales
C) Jura Mountains D) Alps

30. Which is the most dominant rocks of the Karnatakacraton?
A) Schists B) Granites
C) Gneisses D) Granulites

31. Which of the following is diamondiferous?
A) Dharwars B) Cuddapas
C) Vindhyans D) Sargurs

32. Which of the following is petroliferous?
A) Barakar series B) Barail series
C) Nallamalai series D) Niniyur series

33. Which of the following is the oldest?
A) Vaikom formation B) Warkalli formation
C) Vembanad formation D) Quilon formation

34. With which rocks the major coal deposits of India are associated?
A) Gondwana B) Mesozoic
C) Tertiary D) Quaternary

35. To which phylum trilobites belong to?
A) Trilobita B) Cursteacea
C) Arthropoda D) Mollusca

36. Which of the following is NOT a Lower Paleozoic index fossil?
A) Graptolites B) Trilobites
C) Cephalapods D) Equidae

37. In rocks of which age Archaeopteryx was found?
A) Triassic B) Jurassic
C) Cretaceous D) Eocene

38. Which geologic age trilobites survived upto?
A) Permian B) Carboniferous
C) Devonian D) Silurian

39. With which fossil the term "Aristotle's lantern" is associated?
A) Graptolites B) Belemnites
C) Echinoids D) Larger foraminifers

40. To which of the following animal the fossil Eohippuss is ancestral?
A) Hippopotamus B) Zebra
C) Elephant D) Horse

41. Which of the following is **NOT** a plant fossil?
A) Vertebraria B) Gangamopteris
C) Ptilophyllum D) Glossograptus

42. Which of the following is **NOT** a trilobite?
A) Agnostus B) Phacops
C) Olenus D) Physa

43. Approximately how many trilobite species were described in paleontologic lietrature?
A) 2000 B) 5000 C) 10000 D) 20000

44. To which system the crystal class with symbol 2mm belongs to:
A) Monoclinic B) Tetragonal
C) Orthorhombic D) Triclinic

45. Which of the following faces will be plotted close to the centre in a crystal stereogram?
A) 010 B) 111 C) 011 D) 012

46. How many faces a pyritohedron has?
A) 6 B) 12 C) 14 D) 16

47. What is the interfacial angle between two adjacent hexagonal prismatic faces?
A) 60 degrees B) 120 degrees
C) 180 degrees D) 240 degrees

48. In which crystal system zircon crystallizes?
A) Tetragonal B) Orthorhombic
C) Monoclinic D) Triclinic

49. What does a Becke-line test measure?
A) Optic sign B) Refractive index
C) Optic angle D) Retardation

50. What is the optic nature of quartz?
A) Uniaxial positive B) Uniaxial negative
C) Biaxial negative D) Biaxial positive

51. Which of the following does not affect the retardation of a mineral thin section?
A) Relief B) Thickness
C) Birefringence D) Orientation

52. Which of the following pyroxenes has the highest calcium content?
A) Augite B) Enstatite
C) Salite D) Clinoenstatite

53. Which of the following is **NOT** correct?
A) Zircon : high relief
B) Spinel : non pleochroic
C) Cordierite : pleochoric haloes
D) Tourmaline : uniaxial positive

54. Double refraction is taking place in:
A) Isotropic minerals only B) Anisotropic minerals only
C) Biaxial minerals only D) Uniaxial minerals only

55. Which of the following minerals has the highest specific gravity?
A) Magnetite B) Uraninite
C) Barite D) Native gold

56. What is the silicon : oxygen ratio in nesosilicates?
A) 1 : 2 B) 1 : 3 C) 1 : 4 D) 2 : 7

57. How to name a pyroxene with Fs, En and Wo components of 40, 30 and 30 respectively?
A) Augite B) Ferroaugite
C) Subcalcicaugite D) Pigeonite

58. Which of the following is **NOT** a pyroxene?
A) Enstatite B) Ferrosilite
C) Wollastonite D) Pargasite

59. What name to be used for a plagioclase with An-25 and Ab -75 ?
A) Andesine B) Bytownite
C) Labradorite D) Oligoclase

60. Which of the following crystallizes in the isometric system?
A) Haematite B) Ilmenite
C) Rutile D) Magnetite

61. Which of the following property is **NOT** affected by metamictization?
A) Refractive index B) Colour
C) Breringence D) Dispersion

62. Which of the following minerals has the highest amount of titanium?
A) Ilmenite B) Titanite
C) Rutile D) Perovskite

63. Which of the following is stable at 700◦ C temperature and 7 kb pressure?
A) Andalusite B) Sillimanite
C) Kyanite D) Mullite

64. Which of the following is polymorphous with brookite?
A) Ilmenite B) Rutile
C) Magnetite D) Chromite

65. Which is the most predominant element in the Earth's crust?
A) Silicon B) Oxygen
C) Aluminium D) Iron

66. Which of the following is the most abundant REE in the earth's crust?
A) La B) Ce C) Eu D) Yb

67. Which of the following is a chalcophile element?
A) Cr B) Mn C) Cd D) Au

68. Which mineral precipitates at an environment of very low pH but very high Eh?
A) Gypsum B) Anhydrite
C) Pyrite D) Goethite

69. Where is the position of calcium carbonate fence in an Eh-pH diagram?
A) Eh value of 0 B) Eh value of +1
C) Eh value of -1 D) pH value of 8

70. Which of the following is measured as oxygen isotope ratio?
A) O-18 & O-17 B) O-18 & O-16
C) O-18 & O-19 D) O-17 & O-16

71. What causes the formation of tektites?
A) Organic sedimentation B) Glacial deposition
C) Extraterrestrial impact D) Evaporization

72. Which word in Hawaiian language means "smooth-unbroken lava"?
A) pahoehoe B) aa
C) aloka D) mahi-mahi

73. How to name an igneous rock with mean grain diameter of 1 mm?
A) Fine-grained B) Very fine-grained
C) Medium-grained D) Coarse-grained

74. Which of the following textures is common in komatiites?
A) Spinifex B) Seriate
C) Cumulate D) Rapikivi

75. Name a rock with 30 % quartz, 15% orthoclase, 50% plagioclase and 5% hornblende?
A) Granite B) Granodiorite
C) Diorite D) Tonalite

76. Name the volcanic rock with SiO_2 of 60 wt.% and (Na_2O + K_2O) of 3 wt.%.
A) Andesite B) Basalt
C) Rhyolite D) Dacite

77. Which alphabet in Mineralogical Phase Rule gives the number of minerals?
A) P B) F C) C D) M

78. Which ternary system is regarded as a basaltic analogue?
A) Ab-Or-An B) Fo-Di-An
C) Ab-Or-Di D) Fo-Fa-Di

79. Which ternary diagram depicts iron-enrichment in tholeiitic suites?
A) ACF B) AKF C) AFM D) QAP

80. Which of the following is an ultramafic rock?
A) Anorthosite B) Peridotite
C) Keratophyre D) Carbonatite

81. Which of the following is a rock with subequal amounts of clay and carbonates?
A) Flysch B) Marl
C) Arkose D) Molasse

82. What is the term used to denote microcrystalline carbonate mud?
A) Sparite B) Microsparite
C) Macrosparite D) Micrite

83. Which of the following minerals indicates a metamorphic provenance?
A) Zircon B) Ilmenite
C) Staurolite D) Cassiterite

84. Which of the following metamorphic facies is of highest pressure?
A) Eclogite B) Hornblende-hornfels
C) Pyroxene-hornfels D) Sanidinite

85. Which mineral is characteristic of green-schist facies?
A) Kyanite B) Chlorite
C) Cordierite D) Glaucophane

86. In which metamorphic textures, the grains show preferred orientation?
A) Granoblastic B) Porphyroblastic
C) Gneissic D) Idioblastic

87. Which of the following rocks has sillimanite in it?
A) Granulite B) Charnockite
C) Khondalite D) Peridotite

88. Which of the following is **NOT** a high-grade metamorphic rock?
A) Charnockite B) Khondalite
C) Leptinite D) Amphibolite

89. Which of the following is seen mostly as a metamorphic deposit?
A) Gold B) Diamond
C) Chromite D) Graphite

90. Which of the following is **NOT** a copper mineral?
A) Pyrite B) Chalcopyrite
C) Bornite D) Azurite

91. What is the source rock for Bombay High hydrocarbon deposit?
A) Sandstone B) Limestone
C) Shale D) Clay

92. Which oil field the Panna formation is associated with?
A) Bombay High B) Assam shelf
C) Cauvery Basin D) Godavari Basin

93. Which of the following rocks host diamond deposits?
A) Lamproite B) Komatite
C) Carbonatite D) Enderbite

94. Where do you encounter black smokers?
A) Island arcs B) Collision orogens
C) Deccan traps D) Sea-floor spreading centres

95. What is the age of Skaergaard layered complex?
A) Cambrian B) Eocene
C) Proterozoic D) Jurassic

96. Which place is famous for diamond cutting industry in India?
A) Trichi B) Jaduguda
C) Surat D) Vajrakarur

97. Which of the following metallic ore deposits is asssociated with felsic rocks?
A) Iron B) Copper
C) Chromium D) Platinum

98. Which mineral gives rise to leucoxene on weathering?
A) Magnetite B) Ilmenite
C) Limonite D) Hematite

99. Which of the following is most common SEDEX deposit?
A) Gold B) Gypsum
C) Chromium D) Lead-zinc

100. Which is the major source for lanthanides?
A) Ilmenite B) Uraninite
C) Bastnasite D) Zircon

101. Which State of India has the highest bauxite deposits?
A) Bihar B) Odisha
C) Rajasthan D) Gujarat

102. A variety of which mineral is called alexandrite?
A) Beryl B) Topaz
C) Corundum D) Chrysoberyl

103. With which of the following the term 'vitrain' is associated?
A) Mineral property B) Coal petrography
C) Ore beneficiation D) Gemstone grading

104. Which of the following is more applicable in hydrocarbon exploration?
A) Gravity B) Magnetic
C) Seismic D) Resistivity

105. To which metal the 'Ocimumcentraliafricanum' is a botanical indicator ?
A) Au B) Cu C) Ag D) Cr

106. Which metal is explored by UV lamp survey?
A) Uranium B) Thorium
C) Tungston D) Cerium

107. Which metal is transported as anions?
A) Zn B) Pb C) Mo D) Cu

108. Which of the following is **NOT** a pathfinder element for gold?
A) As B) Sb C) Bi D) Cr

109. Which drilling method gives the best core recovery?
A) Diamond B) Percussion
C) Auger D) Rotary

110. Which is the best type of water-bearing formation?
A) Aquifer B) Aquiclude
C) Aquitard D) Aquifuge

111. What is the unit for expressing tritium in drinking water?
A) Ci/L B) Bq/L C) Gy/L D) Sv/L

112. What is the hydraulic conductivity of sandy soil?
A) 0.6 cm /hour B) 2.6 cm/hour
C) 4.6 cm/hour D) 6.6 cm/hour

113. Which of the following parameters will give a measure of TDS in water?
A) Specific gravity B) Colour
C) Resistivity D) Electrical conductivity

114. Which of the following gives the void ratio of a material?
A) Volume of voids/total volume
B) Volume of voids/volume of solids
C) Volume of voids/volume of liquid or water
D) Volume of voids/porosity

115. What is the weight of 1 carat diamond?
A) 1 g B) 0.5 g C) 0.2 g D) 2 g

116. Which of the following is **NOT** a mining method?
A) Cable tool B) Long wall
C) Room and pillar D) Insitu leaching

117. Which is the cheapest way of nuclear waste disposal?
A) Dry cask storage B) Geologic disposal
C) Nuclear transmutation D) Space disposal

118. Which places in Kerala are noted for excess fluoride in groundwater?
A) Alappuzha & Palakkad B) Idukki&Waynad
C) Kannur &Kasaragod D) Chavara&Neendakara

119. Which is not commonly associated with earth quake?

A) Tsunami B) Soil liquefaction

C) Landslide D) Radiation leakage

120. Which of the disasters the Barren Island is famous for?

A) Tsunami B) Earth quake

C) Coastal erosion D) Volcanism

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