

13 — EARTH SCIENCES

(Answer ALL questions)

56. From the Earth surface to interior, the velocity of P-waves decreases and the material density increases at the boundary between
1. Mantle and outer core
 2. Crust and mantle
 3. Outer core and inner core
 4. Continental crust and oceanic crust
57. The residual hills that stand out at the end of a karst cycle of erosion are called as
1. Bernhardtts
 2. Inselburges
 3. Hums
 4. Monad rocks
58. Select the drainage pattern, which characteristic of bolsons in arid and semi arid regions
1. Centripetal
 2. Centrifugal
 3. Annular
 4. Redial
59. Ventifacts are formed by ————— action.
1. River
 2. Wind
 3. Glacial
 4. Marine
60. Glacial forms
1. Point bar
 2. Spit
 3. Cirques
 4. Loess
61. When did super continent – Pangaea begin to break up?
1. Proterozoic
 2. Paleozoic
 3. Cenozoic
 4. Mesozoic
62. Which mineral is having hardness '4' as per Moh's scale of hardness?
1. Fluorite
 2. Feldspar
 3. Apatite
 4. Topaz
63. Bentonite is an
1. Acicular mineral
 2. Absorbent clay
 3. Audit
 4. Aranaceous mineral
64. Which of the following is the correct answer for the term 'crystal parting'?
1. Minerals break along planes of structural weakness due to external stress
 2. Minerals break along planes of crystal face
 3. Minerals break along plane of axis
 4. Minerals break along basal cleavage
65. Molten lava when cooled forms into crystals are the characteristics of ————— rock type.
1. Metamorphic
 2. Sedimentary
 3. Igneous
 4. Both metamorphic and sedimentary

66. In which of the following environments you can find Herringbone structure?
1. Fluvial
 2. Aeolian
 3. Lacustrine
 4. Tidal
67. A metamorphic rock consists of pyroxene, plagioclase and quartz, and exhibits hornfelsic texture. The rock has undergone _____ metamorphism.
1. Regional
 2. Contact
 3. Cataclastic
 4. Impact
68. Eparchean Unconformity separates the geological units of
1. Early Archaean to late Archaean
 2. Archaean from Proterozoic
 3. Proterozoic to Paleozoic
 4. Paleozoic to Mesozoic
69. Lateral offset in drainage lines is commonly associated with
1. Normal faults
 2. Reverse fault
 3. Thrust fault
 4. Strike-slip fault
70. In an structural basin, the youngest strata is found
1. At the center of the basin
 2. On the margins of the basin
 3. Half-way between the center and the margins of the basin
 4. Beneath the older strata
71. Contours when unite together form a
1. Ridge
 2. Valley
 3. Cliff
 4. Overhanging cliff
72. The remains of organism are better preserved
1. On the land
 2. In the marine sedimentary deposits
 3. In the tectonic areas
 4. In the magma chamber
73. Taphonomy is
1. The study of nano fossils
 2. The study of classification of plants and animals
 3. The study of events between the death of an organism and its subsequent burial and fossilisation
 4. The study land features of past
74. Bharat Ratna' medal is made up of
1. Gold
 2. Platinum
 3. Silver
 4. Diamond
75. Ores of copper, lead and zinc are formed by the process
1. Magmatic segregation
 2. Magmatic differentiation
 3. Contact metamorphism
 4. Magmatic injection

76. Uranium is occurs in
1. Acid Igneous rocks
 2. Basic igneous rocks
 3. Sedimentary rocks
 4. Metamorphic rocks
77. Propane is a
1. Liquefied petroleum gas
 2. Liquefied petroleum oil.
 3. Kerogen
 4. Organic matter
78. Ore deposits formed by the effects of high temperature solution is
1. Magmatic solution
 2. Metasomatism
 3. Hydrothermal solution
 4. Magmatic injection
79. Luster of Diamond is
1. Vitreous
 2. Adamantine
 3. Splendent
 4. Glistening
80. In geochemistry the term Threshold value is
1. The lower limit of normal background fluctuation
 2. Blank solution values
 3. The upper limit of normal background fluctuation
 4. Reference values
81. Which is the most stable mineral towards weathering?
1. Quartz
 2. Feldspar
 3. Hornblende
 4. Olivine
82. The term isotope is used for the elements
1. Same chemical properties and same atomic weight
 2. Differing in atomic weight and stability but not appreciably in chemical properties
 3. Same in atomic weight and stability but differing in chemical properties
 4. With the same atomic weight but different in neutrons and protons value
83. The scale of a vertical aerial photograph, taken from 10,000 ft using a 15.3 cm focal length camera is
1. 1:25,000
 2. 1:20,000
 3. 1:1,50,000
 4. 1:15,300
84. Identify the correct sequence of electromagnetic waves in their increasing frequency
1. Radio wave, microwave, infrared, visible, ultra violet, X-ray
 2. Radio wave, X-ray, infrared, microwave, ultra violet, visible
 3. X-ray, infrared, microwave, ultra violet, Radio wave, visible
 4. Microwave, radio wave, visible, X-ray, ultra violet, infrared

85. Gardener's formula relates the seismic velocity (V_p) to
1. Porosity
 2. Permeability
 3. Density
 4. Lithology
86. A drainage basin with an area of $2.0 \times 10^6 \text{ m}^2$ receives continuous rainfall for 48 hours at a uniform rate of 3 mmh^{-1} . The volume of precipitation is _____ m^3 of water.
1. 288000
 2. 287000
 3. 286700
 4. 287500
87. The path finder element for exploration for gold deposits is
1. Nickel
 2. Antimony
 3. Arsenic
 4. Silver
88. Ocean island Basalt magmas are characterized by
1. Depletion in LILE and LREE compare to MORB
 2. Enrichment in LREE and LILE
 3. Large scale contamination of continental crust
 4. Enrichment of LREE and LILE compare to continental crust
89. A step-like topographic expression in aerial photographs indicates
1. Inter-bedded horizontal sediments
 2. Inclined sandstone and shale
 3. Limestone
 4. Schist
90. The downward movement of wet soil along the slopes under the influence of gravity is
1. Plastic outflows
 2. Debris flow
 3. Rock slides
 4. Solifluction
91. Flood hazards along a stream may be greatly reduced by the use of
1. Deforestation
 2. Channelization
 3. Flood plains
 4. Retention ponds
92. Compressibility can be described as reciprocal of
1. Bulk modulus
 2. Young Modulus
 3. Rigidity modulus
 4. Poisson Ratio
93. Stand-up time is a term in Engineering Geology associated with
1. Dams
 2. Bridges
 3. Tunnels
 4. Landslides

94. Which of the following effect do NOT result in geometrical errors in satellite images?
1. Earth rotation
 2. Earth curvature
 3. Sensor motion platform
 4. Atmosphere absorption
95. Kanjamalai in Tamil Nadu is known for occurrence of
1. Lignite
 2. Iron ores
 3. Magnesite
 4. Terri sands
96. Dome is indicated in aerial photos as
1. Radial drainage
 2. Dendritic drainage
 3. Braided drainage
 4. Rectangular drainage
97. The hydrological cycle describes the transport of
1. Nitrogen
 2. Carbon
 3. Water
 4. Hydrogen
98. The permissible limit of fluoride in groundwater for human consumption is
1. 15 ppm
 2. 150 ppm
 3. 1.5 ppm
 4. 5 ppm
99. The ratio of interstices total volume of rock is
1. Secondary porosity
 2. Effective porosity
 3. Primary porosity
 4. Enhanced porosity
100. Isohyets are the points joining the areas of equal
1. Pressure
 2. Temperature
 3. Rainfall
 4. Salinity
101. Jack test is meant to find out _____ of site rocks.
1. In situ moisture conditions
 2. Joint density
 3. Porosity
 4. Deformation characteristics of rocks
102. The Bhakra Dam is located on
1. Sandstone with siltstone formation
 2. Quartzite formation
 3. Siwalik clay stones
 4. Ironstone
103. Which of the following is released in large quantities from coal after it is burnt?
1. Sulphur dioxide
 2. Nitrogen Dioxide
 3. Hydrogen
 4. Helium
104. Stream which flows in the opposite direction to the original consequent streams are described as
1. Obsequent
 2. Subsequent
 3. Insequent
 4. Resequent
105. Which of the following has the least stiffness?
1. Limestone
 2. Sandstone
 3. Quartz
 4. Basalt

106. The number of brightness levels which the sensor on-board a satellite or aircraft can record is known as _____ resolution.
1. Spatial
 2. Spectral
 3. Radiometric
 4. Colorimetric
107. Schlumberger configuration method is associated with _____ survey.
1. Theodolite
 2. Electrical resistivity
 3. Gravity
 4. Magnetic
108. Brazilian test is conducted on rocks to determine
1. Shear strength
 2. Modulus of elasticity
 3. UCS
 4. Tensile strength
109. Which of the following is NOT a polar orbiting satellite?
1. IRS P4
 2. CARTOSAT
 3. INSAT 1D
 4. LANDSAT 5
110. The drainage pattern which shows a lack of structural control to the stream flow direction is described as
1. Parallel
 2. Dendritic
 3. Rectangular
 4. Trellis
111. Rainwater is distinguished from groundwater by _____ method.
1. Tritium
 2. Beryllium
 3. Rb-Sr
 4. Radiocarbon
112. Period of SW Monsoon in TamilNadu is
1. October to December
 2. March to May
 3. June to September
 4. January and February
113. V-shaped gully sections observed in aerial photography is characteristic of
1. Silt
 2. Sand and gravel
 3. Silt and clay
 4. Clay
114. Which one of the following is Arch dam?
1. NagarjunaSagar Dam
 2. Hirakund Dam
 3. Bhakra Dam
 4. Idduki Dam
115. Fresh or salt water inter-trapped in sediments during their deposition is referred as
1. Juvenile water
 2. Connate water
 3. Meteoric water
 4. Spring water