

1. The spectral range for which the atmosphere is transparent:
A) Absorption B) Scattering C) Windows D) Reflection
2. What is one pixel in 1 arc second Shuttle Radar Topography Mission (SRTM) elevation data?
A) 30 m × 30 m B) 90 m × 90 m
C) 12 m × 12 m D) 10 m × 10 m
3. The latest Landsat satellite sent to orbit:
A) Landsat 10 B) Landsat 9 C) Landsat 8 D) Landsat 7
4. Match the remotely sensed data products of List -I with their respective spectral region of working in List-II:

List -I	List -II
a. Sentinel-1	1. Hyperspectral
b. Sentinel-2	2. Elevation
c. PRISMA	3. Optical
d. ASTER	4. Microwave

A) a-4, b-3, c-2, d-1	B) a-3, b-4, c-2, d-1
C) a-4, b-3, c-1, d-2	D) a-3, b-4, c-1, d-2
5. ISRO's mission to sun:
A) Mars Orbiter Mission B) Chandrayaan-1
C) Chandrayaan-2 D) Aditya-L1
6. The official portal of National Remote Sensing Centre (NRSC) meant for downloading ISRO data product:
A) Bhuvan B) Bhukosh C) SERB D) All the above
7. The GNSS exclusively meant for Indian aerospace navigation:
A) GLONASS B) GAGAN C) GPS D) Bei Dou
8. Which projection system is Universe Transverse Mercator (UTM)?
A) Cylindrical B) Conical C) Planar D) None of these
9. The process of assigning real-world coordinates to each pixel of a raster is:
A) Rubber sheeting B) Georeferencing
C) Projection D) None of these
10. WGS 84 is a:
A) Global Datum B) Local Datum
C) Geoid D) Mean Sea Level

11. Assertion (A): Global carbon footprint is 4 tons
Reason (R): Burning of fossil fuel is the major contributor
- A) Both A and R are true and R is the correct explanation of A
B) Both A and R are true but R is not the correct explanation of A
C) A is true, but R is false
D) A is false, but R is true
12. The definition of hazard is:
- A) Probability of occurrence of a potentially damaging phenomenon
B) Catastrophe that causes great damage and loss of life
C) Exposure to a danger
D) Dividing an area into discrete zones based on a danger
13. Ozone is in which atmospheric layer?
- A) Troposphere B) Stratosphere
C) Mesosphere D) Thermosphere
14. The consequence(s) of desertification is/are:
- A) Land degradation B) Soil erosion
C) Loss of biodiversity D) All the above
15. The point on the earth near to its center:
- A) North Pole B) South Pole
C) Equator D) Floor of Challenger Deep
16. 180° longitude is called:
- A) Greenwich Meridian B) Prime Meridian
C) International Date Line D) Equator
17. The difference(s) between clinometer and Brunton compass is/are:
- A) Clinometer has a free-fall bell for measuring dip
B) Brunton compass has a bull's eye level
C) Brunton compass has a horizontal level
D) All the above
18. Lines connecting points of equal depths:
- A) Contour B) Isoseismal
C) Isohyets D) Isobaths
19. Which one of the following is(was) **not** a research camp of India in Antarctica?
- A) Dakshin Gangotri B) Maitri
C) Bharati D) Himadri

20. The South Pole of the Moon where the rover of Chandrayaan-3 landed is on one of the biggest impact craters in the Solar System. Which is this crater?
 A) Aitken Basin B) Vredefort
 C) Helles Basin D) Meteor Crater
21. The tallest uninterrupted waterfall in the world:
 A) Angel fall B) Niagara fall C) Jog fall D) Tugela fall
22. With the available evidences, the earth differs from other rocky planets of the Solar System by the presence of:
 A) Liquid water B) Oxygen in the atmosphere
 C) Life D) All the above
23. The branch of geology that deals with the study of size and shape of the earth:
 A) Geomorphology B) Geodesy
 C) Geochronology D) Physical Geology
24. The discontinuity that separates the inner and the outer core is ---- discontinuity.
 A) Lehmann B) Conrad
 C) Gutenberg D) Mohorovicic
25. Subduction zones are associated with:
 A) Divergent boundary B) Convergent boundary
 C) Transform boundary D) None of these
26. The mushroom-shaped features seen in arid deserts:
 A) Pavement B) Ventifacts
 C) Pedestal rocks D) Driekanter
27. Exfoliation is a type of:
 A) Foliation B) Lineation
 C) Physical weathering D) Chemical weathering
28. Stream ordering was proposed by:
 A) Hutton B) Horton C) Davis D) Penck
29. The largest lithospheric plate:
 A) Pacific B) Eurasian C) Indian D) Antarctic
30. The narrow passage of water connecting two large bodies of water:
 A) Bay B) Strait C) Spit D) Bar

31. Match the type of landforms in List -I with its agent in List -II:
- | | |
|---------------|----------------|
| List -I | List -II |
| a. Terrace | 1. Glacier |
| b. Beach | 2. Ocean |
| c. Drumlin | 3. Groundwater |
| d. Speleothem | 4. River |
- A) a-1, b-2, c-3, d-4 B) a-2, b-1, c-4, d-3
 C) a-4, b-2, c-1, d-3 D) a-2, b-4, c-3, d-1
32. Assertion (A): Karst topography are seen in limestone terrain
 Reason (R): Limestone is more prone to erosion by water
- A) Both A and R are true and R is the correct explanation of A
 B) Both A and R are true but R is not the correct explanation of A
 C) A is true, but R is false
 D) A is false, but R is true
33. The slowest type of earth movement down the slope:
 A) Debris flow B) Debris slide C) Creep D) Avalanche
34. Identify the correct sequence of soil profile from top to bottom:
 A) Humus→Saprolite→Saprock→Bedrock
 B) Saprolite→Humus→Saprock→Bedrock
 C) Saprolite→Humus→Bedrock→Saprock
 D) Humus→Saprolite→Bedrock→Saprock
35. The cliffy sea coast in Kerala exhibiting the type section of the Tertiary sedimentary rock:
 A) Padappakara B) Chowara C) Bekal D) Varkala
36. The most violent type of volcanic eruption:
 A) Hawaiian B) Plinian C) Vesuvian D) Strombolian
37. Magnetic reversal refers to:
 A) Change in position of magnetic poles
 B) Change in position of geographic poles
 C) Influx of solar flare
 D) Cosmic ray influx from Oort cloud
38. The Great Red Spot, an anticyclonic storm, is characteristic of which following planet/satellite:
 A) Mars B) Moon C) Saturn D) Jupiter
39. Lake formed by meteorite impact:
 A) Paternoster B) Playas C) Plunge Pool D) Astrobleme

40. Ramgarh meteorite impact crater is located in:
 A) Rajasthan B) Bihar C) Maharashtra D) Telengana
41. The two satellites of Mars, which were pictured by the Mars Orbiter Mission:
 A) Vesta-Ceres B) Io-Europa
 C) Deimos-Phobos D) Titan-Tethys
42. Match List-I with their abundance/presence in List-II:
 List-I List-II
 a. Hydrogen 1. Earth's atmosphere
 b. Nitrogen 2. Venus' atmosphere
 c. H₂SO₄ 3. Mars' atmosphere
 d. CO₂ 4. Universe
 A) a-2, b-1, c-3, d-4 B) a-4, b-1, c-2, d-3
 C) a-1, b-2, c-4, d-3 D) a-1, b-4, c-3, d-2
43. Energy in a thermodynamic system is:
 A) Enthalpy B) Entropy C) Both A & B D) Neither A nor B
44. Half-life of C¹⁴ is:
 A) ~5730 years B) ~573 million years
 C) ~5.7 billion years D) None of these
45. Scheelite is an ore of:
 A) Gold B) Bismuth C) Mercury D) Tungsten
46. Fibrous variety of gypsum:
 A) Satinspar B) Dog toothspar
 C) Icelandspar D) Schillarspar
47. The deposits which are considered synonymous with present day black smokers:
 A) Volcanogenic massive sulphide
 B) Placer
 C) Sedimentary Exhalative
 D) Skarn
48. The international agreement that establishes a legal framework for all marine and maritime activities:
 A) Riparian Law
 B) International Marine Law
 C) Mines and Minerals (Development and Regulation) Act
 D) UNCLOS
49. The main oil producing horizon in the Tertiary Succession of Upper Assam:
 A) Jaintia B) Barail C) Tipam D) Surma

50. Choose the correct pair based on metal and its ore:
 A) Lead→Pyrolusite B) Manganese→Bornite
 C) Zinc→Pyrite D) Copper→Chalcopyrite
51. Which among the following is **not** a strategic mineral?
 A) Cobalt B) Lithium C) Tungsten D) Evaporite
52. IGRF stands for:
 A) International Geomagnetic Reference Field
 B) International Geochronologic Reference Field
 C) International Geochemical Reference Field
 D) International Geobotanical Reference Field
53. Bouguer anomaly deals with:
 A) Magnetism B) Electrical field
 C) Gravity D) Polarization
54. Oxidation of sulphide mineral deposits on the surface of the earth is:
 A) Gossan B) Skarn C) Haloes D) Lit-par-Lit
55. World's largest kyanite deposit is in:
 A) Meghalaya B) Jharkhand C) Tamilnadu D) Rajasthan
56. Hutti mines is famous for:
 A) Iron B) Diamond C) Gold D) Silver
57. The highest grade coal:
 A) Anthracite B) Bituminous C) Lignite D) Peat
58. Type of drilling used for groundwater mining:
 A) Direct rotary B) Down-The-Hole
 C) Percussion drill D) All the above
59. Wenner array is used in ----- survey.
 A) Gravity B) Electrical
 C) Geochemical D) Magnetic
60. The scale of 49M/16 is:
 A) 1:250000 B) 1:50000 C) 1:25000 D) 1:75000
61. A shift in an object's image position caused by its elevation above a datum:
 A) Image parallex B) Photo mosaic
 C) Relief displacement D) Photogrammetry
62. The spectral range 0.4 to 0.7 μm belongs to:
 A) Thermal B) Microwave C) Optical D) Ultraviolet

72. Peacock ore is the name given to:
 A) Pyrite B) Bornite
 C) Chalcopyrite D) Hematite
73. The intergrowth formed by K-felspar and vermicular quartz:
 A) Spherulitic B) Myrmekitic C) Orbicular D) Graphic
74. Gibb's phase rule is expressed as:
 A) $P+F=C+1$ B) $P+C=F+1$ C) $C+F=P+1$ D) None of these
75. In the Bowen's reaction, two consecutive members in the discontinuous series is called ----- pair.
 A) Congruent B) Eutectic C) Incongruent D) Reaction
76. The doubly-convex concordant igneous pluton is:
 A) Lopolith B) Phacolith C) Laccolith D) Dyke
77. Columnar joints are seen in:
 A) Basalt B) Rhyolite C) Phonolite D) All of these
78. An ultrabasic rock, unique to Archean greenstone belts, exhibiting spinifex texture:
 A) Komatiites B) Dunite
 C) Peridotites D) Pyroxenite
79. Diamonds are hosted in Kimberlites and:
 A) Lamproites B) Lamprophyres
 C) Anorthosites D) Carbonatites
80. The volcanic equivalent of syenite:
 A) Andesite B) Aplite C) Granite D) Trachyte
81. Equigranular texture in which the grains are euhedral:
 A) Allotriomorphic B) Panidiomorphic
 C) Hypidiomorphic D) Poikilitic
82. The oldest horse fossil:
 A) Orohippus B) Eohippus C) Epihippus D) Mesophippus
83. The stratigraphy of Jurassic of Kutch:
 A) Patcham→Chari→Umia→Katrol
 B) Patcham→Chari→Katrol→Umia
 C) Chari→Patcham→Umia→Katrol
 D) Chari→Patcham→Katrol→Umia

92. One day a geologist started his fieldwork from his tent. He first walked northward for 125 m, then changed his path towards N270° and walked another 700 m. Then he turned to his right and walked 500 m. Finally he walked back to his tent after the fieldwork in the shortest straight route. Which direction he has to walk to reach back to his tent?
 A) N90° B) N180° C) N135° D) N270°
93. Cofferdam is a part of:
 A) Spillway B) Reservoir C) Switchyard D) Main dam
94. Curtain grouting is meant for:
 A) Slope protection B) Dam foundation
 C) Spillway leakage D) Canal lining
95. Terzaghi's classification is for:
 A) Soil mass B) Rock mass C) Soil fracture D) Rock fracture
96. Water in the zone of saturation:
 A) Soil moisture B) Juvenile water
 C) Groundwater D) Vadose water
97. Which one of the following diagram is **not** used for groundwater quality?
 A) Hill-Piper diagram B) Stiff's diagram
 C) Wilcox diagram D) Hydrograph
98. Assertion (A): Element with even atomic number are abundant in the universe
 Reason (R): This is stated by Oddo-Harkn's rule
 A) Both A and R are true and R is the correct explanation of A
 B) Both A and R are true but R is not the correct explanation of A
 C) A is true, but R is false
 D) A is false, but R is true
99. 'Toblerone' classification is for:
 A) Sandstone B) Limestone
 C) Conglomerate D) Chert
100. As per the Udden-Wentworth scale, which decreasing order of grain size is correct?
 A) Boulder→Pebble→Cobble→Granule
 B) Boulder→Cobble→Pebble→Granule
 C) Boulder→Cobble→Granule→Pebble
 D) Boulder→Pebble→Granule→Cobble
101. Which is **not** an evaporite?
 A) Fluorite B) Halite C) Anhydrite D) Sylvite

102. A fish skeleton-like structure exhibited mainly by sandstone:
 A) Flame structure B) Herringbone structure
 C) Load cast D) Flaser bedding
103. -----are the product of subducted colder crustal rocks, which are taken to depth, metamorphosed and then exhumed.
 A) Greenstone belt B) Ophiolite
 C) Meta-pyroxenite D) Paired metamorphic belt
104. Metamorphic grade was introduced by:
 A) Turner B) Winkler C) Myashiro D) Tilley
105. The two common metamorphic rocks of southern Kerala:
 A) Khondalite-charnockite B) Khondalite-granite gneiss
 C) Charnockite-granite gneiss D) Granite gneiss-hornblende gneiss
106. The fundamental chronostratigraphic unit:
 A) Era B) Erathem C) Eon D) Period
107. The principle of original horizontality was proposed by:
 A) William Smith B) James Hutton
 C) Nicholas Steno D) L.L. Fermor
108. Cretaceous-Paleogene boundary is famous for:
 A) Pan-African event B) Extinction of dinosaurs
 C) Rajmahal Traps D) Formation of Himalaya
109. A fossil with wide geographical distribution but limited stratigraphic range:
 A) Living fossil B) Index fossil
 C) Zone fossil D) Leaked fossil
110. An unconformity within the parallel layers of sedimentary rocks:
 A) Non-conformity B) Angular unconformity
 C) Disconformity D) Paraconformity
111. LGM is the acronym for:
 A) Last Glacial Maxima B) Last Glacial Minima
 C) Last Gondwana Maxima D) Last Gondwana Minima
112. Lucy is a fossil of:
 A) Dinosaurs B) Woolly mammoth
 C) Human D) Horse
113. Evidences of the Great Oxygenation Event (GOE) can be seen during:
 A) 4.0 and 2.5 Ga B) 4.0 and 0.5 Ga
 C) 2.5 and 0.5 Ga D) 2.5 and 1.5 Ga

114. Sites with exceptional preservation potential of fossils:
 A) Lagerstätten B) Bogs
 C) Marshes D) Biozone
115. Repeated cycles of astronomical changes are described through:
 A) Signor-Lipps effect B) Milankovitch cycle
 C) Gould's law D) Dollo's law of irreversibility
116. With the available records, which among the following is considered as the most important mass extinction in terms of loss of species?
 A) End Ordovician (445 Ma)
 B) Late Devonian (380 Ma)
 C) Permo-Triassic (251 Ma)
 D) Cretaceous-Tertiary (66 Ma)
117. Chicxulub impact crater, the event that caused the extinction of dinosaurs, is located in:
 A) Chile B) Mexico C) Canada D) Brazil
118. In genetics, sudden and large variation is called:
 A) Speciation B) Variation
 C) Mutation D) Evolutionary jump
119. Torsion is exhibited by:
 A) Gastropoda B) Cephalopoda
 C) Trilobites D) Brachiopoda
120. The Upper Gondwana plant leaf fossil with ribs and veins:
 A) Gangamopteris B) Glossopteris
 C) Ptilophyllum D) Lycopods
