

**DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO**

Test Booklet Series

**A**

## TEST BOOKLET

GEOLOGY

PAPER – II

T. B. C. : GGM – 2/2019

Sl. No. **2020**

Time Allowed : 3 Hours

Maximum Marks : 300

### : INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
3. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. **YOU ARE REQUIRED TO FILL UP & DARKEN ROLL NO., TEST BOOKLET / QUESTION BOOKLET SERIES IN THE ANSWER SHEET AS WELL AS FILL UP TEST BOOKLET / QUESTION BOOKLET SERIES AND SERIAL NO. AND ANSWER SHEET SERIAL NO. IN THE ATTENDANCE SHEET CAREFULLY. WRONGLY FILLED UP ANSWER SHEETS ARE LIABLE FOR REJECTION AT THE RISK OF THE CANDIDATE.**
5. This Test Booklet contains **150** items (questions). Each item (question) comprises four responses (answers). You have to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided by using **BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. **There will be no negative markings for wrong answers.**
8. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions sent to you with your **Admission Certificate**.
9. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* issued to you. You are allowed to take with you the candidate's copy / second page of the Answer Sheet along with the **Test Booklet**, after completion of the examination, for your reference.
10. Sheets for rough work are appended in the Test Booklet at the end.

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SEAL

1. 'Bajada' is a type of :
  - (A) Glacial deposit
  - (B) Alluvial fan
  - (C) Meandering stream
  - (D) Sand dune
  
2. A stream consisting of interwoven channels is known as :
  - (A) Fluvioglacial stream
  - (B) Braided stream
  - (C) Meandering stream
  - (D) Matured valley stream
  
3. A canyon is a :
  - (A) A deep valley with vertical sides
  - (B) A deep asymmetrical valley
  - (C) Broad, matured stream course
  - (D) Valley formed by aeolian activity
  
4. A network of parallel or subparallel streams developed along strike and dip directions are known as :
  - (A) Dendritic
  - (B) Radial
  - (C) Trellis
  - (D) Domal
  
5. The term 'eustatic' implies :
  - (A) Worldwide changes in sea level
  - (B) Erosion of land to peneplanation
  - (C) Exhumation of rocks
  - (D) Confluence of river streams
  
6. Fjords are formed due to :
  - (A) Lacustrine process
  - (B) Wind action
  - (C) Glacial activity
  - (D) Alluvial activity
  
7. Well sorted aeolian deposits are chiefly composed of :
  - (A) Clay
  - (B) Sand
  - (C) Sand and Silt
  - (D) Silt and Clay
  
8. Drainage density of a basin is a measure of :
  - (A) Total number of the highest order streams divided by the total number of the next lower order streams
  - (B) Length of the largest stream divided by the total area of the basin
  - (C) Total length of streams of all orders divided by the total area of the basin
  - (D) Total number of streams of all orders

9. Moraines are formed in :
- (A) Lacustrine Environment
  - (B) Glacial Environment
  - (C) Alluvial Environment
  - (D) Marine Environment
10. Karst topography is most commonly developed in :
- (A) Shale bearing areas
  - (B) Sandstone bearing areas
  - (C) Laterite bearing areas
  - (D) Limestone bearing areas
11. A sand dune with its long axis transverse to wind direction is called :
- (A) Longitudinal dune
  - (B) Sand ridge
  - (C) Parallel dune
  - (D) Barchan
12. Esker is a :
- (A) Thoroughly graded bed
  - (B) Deposit formed by wind action
  - (C) Glaciofluvial deposit
  - (D) Alluvial deposit rich in clay matter
13. Development of stalactite and stalagmite is associated with :
- (A) Abrasion of valley floor
  - (B) Solution activity
  - (C) Sorting process
  - (D) Organic activity in ocean beds
14. Mass wasting is primarily affected by :
- (A) Force of gravity
  - (B) Intensity of oxidation
  - (C) Intensity of carbonization
  - (D) Strength of streams
15. If a region is lacking in structural control, then the drainage pattern in such regions will be :
- (A) Dendritic
  - (B) Trellis
  - (C) Rectangular
  - (D) Radial
16. A Caldera is :
- (A) A very large crater
  - (B) A long mountain chain
  - (C) A gorge formed due to faulting
  - (D) A U-shaped valley

17. Rock flour or gouge is closely linked to:
- (A) Ductile deformation
  - (B) Brittle deformation
  - (C) Flow of incompetent beds
  - (D) Collapse structures
18. The angle which the fault plane makes with vertical plane is known as:
- (A) Net slip
  - (B) Heave
  - (C) Strike slip
  - (D) Hade
19. If the hanging wall in a fault is in downthrown side, it is called:
- (A) Reverse fault
  - (B) Normal fault
  - (C) Tear fault
  - (D) Hinge fault
20. The line which is parallel to the hinge in a fold is called:
- (A) Axis of the fold
  - (B) Axial plane of the fold
  - (C) Crest of the fold
  - (D) Plunge of the fold
21. If the axial plane of the fold is horizontal, then it is said to be:
- (A) Open fold
  - (B) Tight fold
  - (C) Recumbent fold
  - (D) Isoclinal fold
22. A contact of younger sediments deposited over a thick residual soil that grades into underlying bedrock is called:
- (A) Discontinuity
  - (B) Non-conformity
  - (C) Blended unconformity
  - (D) Angular unconformity
23. The intersection of bedding and cleavage produces:
- (A) Lineation
  - (B) Boudin
  - (C) Mullian structure
  - (D) Joint
24. High angle faults are those that dip greater than:
- (A) 60 degree
  - (B) 65 degree
  - (C) 40 degree
  - (D) 45 degree

25. In which fold there could be two hinges ?
- (A) Tight fold
  - (B) Isoclinal fold
  - (C) Overtuned fold
  - (D) Box fold
26. Thickened crests and troughs with thinner limbs are noticed in :
- (A) Open fold
  - (B) Disharmonic fold
  - (C) Buckle fold
  - (D) Over fold
27. On a geological map, if older strata are found to be surrounded by younger strata then it could be :
- (A) An inlier
  - (B) An outlier
  - (C) An overlap
  - (D) A nappe structure
28. Horst and Graben structures are mainly confined to :
- (A) Transform boundaries
  - (B) Subduction zones
  - (C) Collision zones
  - (D) Divergent boundaries
29. Granite usually exhibits :
- (A) Diagonal joints
  - (B) Strike joints
  - (C) Vertical joints
  - (D) Sheet joints
30. The fold is said to have plunge if :
- (A) The axis is horizontal
  - (B) The axis is not horizontal
  - (C) It is asymmetrical
  - (D) It is tightly folded
31. The two super continental blocks separated due to drifting are :
- (A) Pangea and Laurasia
  - (B) Pangea and Gondwanaland
  - (C) Laurasia and Gondwanaland
  - (D) Laurasia and Panthalassa

32. The convection energy of the earth is commonly released along :
- (A) Transform fault boundaries
  - (B) Subduction zones
  - (C) Divergent boundaries in oceans
  - (D) Collision zones
33. Mohorovicic discontinuity separates :
- (A) Crust and Mantle
  - (B) Inner core from outer core
  - (C) Upper mantle from lower mantle
  - (D) Mantle and core
34. The asthenospheric layer included :
- (A) Crust and upper mantle
  - (B) Lower and upper mantle
  - (C) Crust and mantle
  - (D) Mantle and core
35. An average density of  $10.7 \text{ gm/cm}^3$  prevails at :
- (A) Upper mantle
  - (B) Core
  - (C) Lower crust
  - (D) Lower mantle
36. The process of weathering by exfoliating activity is very effective in :
- (A) Layered rocks
  - (B) Massive rocks
  - (C) Jointed rocks
  - (D) Foliated rocks
37. Pelean type of volcano is known for :
- (A) Most violent activity
  - (B) Quiet flow
  - (C) Submarine flow
  - (D) Ropy type flow
38. Composite cones are the characteristics of :
- (A) Strato volcanoes
  - (B) Cinder cone volcanoes
  - (C) Shield volcano
  - (D) Lava domes

39. According to Airy's theory of isostasy :
- (A) Lighter mountains are floating on the lighter substratum
  - (B) Lighter mountains are floating on the denser substratum
  - (C) Denser mountains are floating on denser substratum
  - (D) Denser mountains are floating on the lighter substratum
40. The Atlantic continental margin of North America is known to be :
- (A) An active margin
  - (B) Passive margin
  - (C) Suture zone
  - (D) Collision zone
41. The average depth of the ocean is :
- (A) 5,200 meters
  - (B) 4,630 meters
  - (C) 3,729 meters
  - (D) 3,062 meters
42. Palaeomagnetic data is useful for understanding :
- (A) Pole reversals
  - (B) Composition of mantle
  - (C) Internal structure of the earth
  - (D) Origin of life on earth
43. Guyot is a :
- (A) Ridge of a fold mountain
  - (B) Major depression in a continental area
  - (C) Flat topped seamount
  - (D) Flat topped hill on the surface
44. Deep sea trenches are generally associated with :
- (A) Circum pacific belt
  - (B) Mid-oceanic ridges
  - (C) Island arcs
  - (D) Collisional areas
45. The temperature regime in the upper part of the lower crust is :
- (A) 400-500°C
  - (B) 300-400°C
  - (C) 100-200°C
  - (D) 200-250°C

46. Which of the following represents the youngest event in the Dharwarian stratigraphy ?
- (A) Sargur Group  
 (B) Closepet Granite  
 (C) Dharwar Super Group  
 (D) Peninsular Gneissic Complex
47. Choose the correct pair of stratigraphic formation and its corresponding age :
- (A) Bhandar Group — Early Proterozoic  
 (B) Niniyur Formation — Cretaceous  
 (C) Long Formation — Oligocene  
 (D) Bheema Group — Cambrian
48. Kutch is the type Area in India for :
- (A) Jurassic formation  
 (B) Early archean rocks  
 (C) Late Archean rocks  
 (D) Cambrian formation
49. Siwaliks are well known for :
- (A) Dinosaur fossil  
 (B) Invertebrate fossils  
 (C) Mammal fossils  
 (D) Plant fossils
50. In Spiti, the Permians are represented by :
- (A) Muth quartzite  
 (B) Kanawar Group  
 (C) Kuling group  
 (D) Agglomerate shale
51. Delhi system is intruded by :
- (A) Erinpura Granite  
 (B) Bijilli Rhyolite  
 (C) Sighbhum Granite  
 (D) Bundelkhand Granite
52. Which of the following statement is correct ?
- (A) The Mesozoic Bhuj formation consists predominantly of sandstones  
 (B) Kaladgi basin is predominantly made of slates  
 (C) Vindhyan supergroup is devoid of limestone  
 (D) Cuddapah basin is predominantly made of metadacites



53. Marker horizon for Devonian in Himalaya is called :
- (A) Lipak formation  
(B) Po formation  
(C) Muth quartzites  
(D) Syzingothyris limestone
54. Stromatolites provide insight for :
- (A) Origin and Evolution of life  
(B) Recognizing boundary between Cambrian and Ordovician  
(C) Glaciation process  
(D) Weathering cycles
55. In Himalayas, the main boundary fault separates :
- (A) Siwalik and Tertiary  
(B) Siwalik and Archean  
(C) Vindhyan and Aravalli  
(D) Siwalik and Delhi Group
56. The Voluminous Deccan Flood Basalts occurred during :
- (A) Ordovician  
(B) Triassic  
(C) Silurian  
(D) Pleistocene
57. Mesozoic and Cenozoic boundary lies approximately at :
- (A) 75 Ma  
(B) 60 Ma  
(C) 120 Ma  
(D) 65 Ma
58. In Kashmir-Hazara area, the Archean rocks are called :
- (A) Buxa series  
(B) Salkhala series  
(C) Sakarsanahalli series  
(D) Aravalli series
59. In the geological history, which of the following occupies longest time period ?
- (A) Paleozoic  
(B) Mesozoic  
(C) Precambrian  
(D) Cenozoic

60. Which of the following is known to be the boundary of mass extinction ?
- (A) Proterozoic – Cambrian
  - (B) Miocene – Pliocene
  - (C) Triassic – Jurassic
  - (D) Cretaceous – Tertiary
61. Archaeocyatha is confined to :
- (A) Lower Palaeozoic
  - (B) Proterozoic
  - (C) Jurassic
  - (D) Tertiary
62. Trilobites lived during :
- (A) Early to late Archean
  - (B) Cambrian to Permian
  - (C) Triassic to Cretaceous
  - (D) Cambrian to Triassic
63. The first group of tetrapods to colonize the land successfully are :
- (A) Aves
  - (B) Mammalia
  - (C) Amphibia
  - (D) Reptilia
64. Crinoids range in age from :
- (A) Triassic to Cretaceous
  - (B) Cambrian to Ordovician
  - (C) Cambrian to recent
  - (D) Jurassic to Cretaceous
65. Organisms which live attached to another larger organism are known as :
- (A) Epifauna
  - (B) Epitheca
  - (C) Epizoic
  - (D) Eozoon
66. Plankton generally refers to :
- (A) Free swimming organisms
  - (B) Bottom dwelling organisms
  - (C) Burrowing organisms
  - (D) Unicellular organisms
67. In the evolution of horse which of the following was the first stage ?
- (A) Hyracotherius
  - (B) Epihippus
  - (C) Meshippus
  - (D) Eohippus

68. Amongst the following flora which represents a conifer ?
- (A) Schizoneura
  - (B) Buriadia
  - (C) Gangamopteris
  - (D) Glossopteris.
69. Which of the following is primate fossil ?
- (A) Stegolophodon
  - (B) Hipparion
  - (C) Ramapithecus
  - (D) Equus
70. Sutures of the ammonoids belonging to which period are an important feature in recognizing their evolution ?
- (A) Late Palaeozoic
  - (B) Cenozoic
  - (C) Mesozoic
  - (D) Early Palaeozoic
71. Physa – the gastropod genus shows :
- (A) Planispirally coiled
  - (B) Dextrally coiled
  - (C) Uncoiled nature
  - (D) Sinisterly coiled
72. Which of the following Brachiopod has dental system ?
- (A) Inarticulata
  - (B) Articulata
  - (C) Deltidium
  - (D) Dethryum
73. Conodont is a :
- (A) Siliceous microfossil
  - (B) Phosphatic microfossil
  - (C) Fossilized floral species
  - (D) Coral shell
74. Which amongst the following is a bivalve genus having toxodont type dentition ?
- (A) Arca
  - (B) Pholadomya
  - (C) Venus
  - (D) Mytilus
75. Echnofossil is a :
- (A) Fossilized lamellibranch shell
  - (B) Fossilized trilobite shell
  - (C) Fossilized serpent trail
  - (D) Fossilized horse foot print

76. Generally, acid igneous rocks contain :
- (A) 10% or more free quartz
  - (B) 15% or more free quartz
  - (C) 60% or more free quartz
  - (D) 65% or more free quartz
77. Andesite is :
- (A) A coarse grained acid plutonic rock
  - (B) A fine grained hypabyssal rock
  - (C) An intermediate volcanic rock
  - (D) An ultrabasic volcanic rock
78. The first mineral formed in the continuous series of Bowen reaction principle is :
- (A) Sodid-Calcic plagioclase
  - (B) Potash feldspar
  - (C) Calcic-sodidic plagioclase
  - (D) Calcic plagioclase
79. A magmatic rock rich in calcium carbonate and often containing rare earth minerals is :
- (A) Alkali basalt
  - (B) Syenite porphyry
  - (C) Carbonatite
  - (D) Granodiorite
80. Generally, a charnockite has a mineral composition of :
- (A) Quartz-Hornblende-Oligoclase
  - (B) Quartz-Epidote-Andesine
  - (C) Quartz-Feldspar-Hypersthene
  - (D) Quartz-Feldspar-Augite
81. If the ferromagnesian content of diorite is 100%, then it is called :
- (A) Perkinite
  - (B) Leptinite
  - (C) Meladiorite
  - (D) Leucodiorite
82. By mineral composition, dolerite is equivalent to :
- (A) Pitchstone
  - (B) Syenite
  - (C) Peridotite
  - (D) Basalt
83. Beerbachite is a variety of :
- (A) Gabbro
  - (B) Basalt
  - (C) Dolerite
  - (D) Monzonite

84. Adamellite contains :
- (A) Roughly equal amounts of Oligoclase and K-feldspar
  - (B) Roughly equal amounts of Quartz and Oligoclase
  - (C) Roughly equal amounts of Quartz and K-feldspar
  - (D) Roughly equal amounts of Quartz and Albite
85. Graphic texture is normally exhibited by:
- (A) Komatiite
  - (B) Pegmatite
  - (C) Phonolite
  - (D) Anorthosite
86. An igneous body that has domed up the strata into which it has been inserted is known as :
- (A) Lopolith
  - (B) Dyke
  - (C) Bysmalith
  - (D) Laccolith
87. A process whereby magma works its way up into the crust of the earth is known as :
- (A) Magmatic injection
  - (B) Magmatic thrusting
  - (C) Magmatic stoping
  - (D) Magmatic intrusion
88. Minette is a type of :
- (A) Diorite
  - (B) Tonalite
  - (C) Aplite
  - (D) Lamprophyre
89. The process of complete or partial melting of a rock is known as :
- (A) Migmatization
  - (B) Assimilation
  - (C) Juvenile magmatism
  - (D) Palingenesis
90. Liquid immiscibility generally results from :
- (A) Mixing of two liquids of two different composition
  - (B) Mixing of two liquids of same composition
  - (C) Unmixing of two liquids of different composition
  - (D) Unmixing of two liquids of same composition

91. Arkose contain more than 25% of :
- (A) Micas
  - (B) Amphiboles
  - (C) Feldspars
  - (D) Chlorite
92. The silt grade detrital sediments would have a size range of :
- (A) 1/16 mm to 1/256 mm
  - (B) Less than 1/256 mm
  - (C) 1/16 mm to 2 mm
  - (D) 2 mm to 1 mm
93. The leaves of hardened clay deposited in a sand or similar sediment as flat or lense shaped structure are called :
- (A) Clay flakes
  - (B) Clay balls
  - (C) Clay stones
  - (D) Clay galls
94. Rounded to sub-rounded clast with a diameter between 64 and 256 mm is generally known as :
- (A) Gravel
  - (B) Pebble
  - (C) Cobble
  - (D) Boulder
95. If a series of inclined bedding planes showing some angular relationship to the direction of current flow, then they are generally called as :
- (A) Gradient beds
  - (B) Current beds
  - (C) Dipping beds
  - (D) Convolute beds
96. Compaction and cementation of sediments occur during :
- (A) Transportation
  - (B) High temperature and pressure medium
  - (C) High water pressure
  - (D) Diagenesis
97. Oscillation ripples are formed in :
- (A) Deep sea environment
  - (B) Beach environment
  - (C) Alluvial environment
  - (D) Desert environment
98. Occurrence of ferroan calcite cementing in a carbonate rock is an indicator of :
- (A) Deep burial diagenesis
  - (B) Vadose diagenesis
  - (C) Phreatic diagenesis
  - (D) Sea floor diagenesis

99. Syn-sedimentary deformation structures are a result of :
- (A) Massive transgression
  - (B) Low sedimentation
  - (C) Marine regression
  - (D) High sedimentation
100. If sediment is dominantly composed of organic detritus, it is known to indicate :
- (A) Complex skewness
  - (B) Positive skewness
  - (C) Negative skewness
  - (D) No skewness
101. In shallow marine environment, generally the palaeocurrent patterns are :
- (A) Polymodal
  - (B) Bimodal
  - (C) Unimodal
  - (D) Both Bimodal and Polymodal
102. A basin with thinner development of sediments and no volcanic rocks, forming adjacent to a craton is called :
- (A) Parageosyncline
  - (B) Miogeosyncline
  - (C) Rift valley
  - (D) Graben
103. Which of the following rocks is principally made up of clay minerals ?
- (A) Arkose
  - (B) Siltstone
  - (C) Greywacke
  - (D) Dolostone
104. Which of the following is a depositional sedimentary structure ?
- (A) Graded bedding
  - (B) Trough cross bedding
  - (C) Collapse structure
  - (D) Injection structure
105. A limestone which contains mainly of organic detritus is generally called as :
- (A) Spargenite
  - (B) Coquina
  - (C) Oolite
  - (D) Calc-tufa

106. Which type of compressive strength is taken as the most important index property of stones ?
- (A) Confined
  - (B) Drained
  - (C) Undrained
  - (D) Unconfined
107. What is the maximum force expressed per unit area, which a stone can withstand without rupturing ?
- (A) Shear strength
  - (B) Tensile strength
  - (C) Compressive strength
  - (D) Bending strength
108. Which rocks possess very high compressive strength ?
- (A) Igneous
  - (B) Sedimentary
  - (C) Metamorphic
  - (D) Both sedimentary and metamorphic
109. Ratio between the total volume of pore spaces to the total volume of the rock is a measure of :
- (A) Void ratio
  - (B) Porosity
  - (C) Pores ratio
  - (D) Bulk density
110. The density of the rock with natural moisture content is known as :
- (A) Dry density
  - (B) Wet density
  - (C) Bulk density
  - (D) Natural density
111. The impact testing of a stone is done to know the :
- (A) Durability
  - (B) Porosity
  - (C) Density
  - (D) Toughness
112. The sudden release of stress in rocks during tunneling will normally result in :
- (A) Rock fall
  - (B) Rock bursts
  - (C) Blockage
  - (D) Water gush



113. Strata dipping at angles upto  $45^\circ$  are called :

- (A) Moderately inclined strata
- (B) Steeply inclined strata
- (C) Plunge
- (D) Overturned

114. Which type of geological structure can be rectified by grouting ?

- (A) Joints
- (B) Folds
- (C) Faults
- (D) Inclined strata

115. When is the strength of a compact rock always greater ?

- (A) When stresses are normal to bedding planes
- (B) When stresses are parallel to bedding planes
- (C) When stresses are inclined at  $45^\circ$  to bedding planes
- (D) When stresses are inclined at  $60^\circ$  to bedding planes

116. Which of the following could be the best site for a dam construction ?

- (A) A site with a granitic bedrock
- (B) A site with good shear fractures
- (C) Lateritic zone
- (D) A site with limestone bedrock

117. Which of the following is true about granite ?

- (A) It has very high crushing strength
- (B) It takes poor polish
- (C) It is a highly porous rock
- (D) It weathers out faster

118. Which of the following is not a desirable property for a road metal ?

- (A) Should be hydrophobic
- (B) Should have sufficient crushing strength
- (C) Should be strongly sheared
- (D) Should be highly porous and permeable

119. Ease with which a stone can be extracted and dressed is called :

- (A) Consistency
- (B) Workability
- (C) Easability
- (D) Permeability

120. Which of the following materials is generally used as a roofing slab ?

- (A) Slate
- (B) Granite
- (C) Marble
- (D) Gneiss

121. The refractive index of the ocean water :

- (A) Increases with salinity
- (B) Increases with temperature
- (C) Decreases with salinity
- (D) Decreases with temperature

122. Which one of the following geometric errors of satellite sensors is random ?

- (A) Scan skew

(B) Panoramic distortion

(C) Earth rotation

(D) Altitude variation

123. The instruments which provide electromagnetic radiation of specified wave length or a band of wave lengths to illuminate the earth surface, are called :

- (A) Microwave sensors
- (B) Passive sensors
- (C) Active sensors
- (D) Optical sensors

124. The coherence length over which there is a strong relationship between amplitudes is :

- (A) Directly proportional to the bandwidth
- (B) Inversely proportional to the bandwidth
- (C) The square of the bandwidth
- (D) The inverse of square of bandwidth

125. The spectral region of the electromagnetic radiation which passes through the atmosphere without much attenuation is known as :

- (A) Ozone hole
- (B) Atmospheric window
- (C) Ozone window
- (D) Black hole

126. The value of energy quantum for radiation of any frequency is proportional to :

- (A) The frequency
- (B) The reciprocal of the energy
- (C) The square of the frequency
- (D) The square root of the frequency

127. A and B are two towers of equal height diametrically opposite on either side of the nadir point at 3 km and 5 km distances. Then, which one of the following statements is correct ?

- (A) Height displacement of A will be less than that of B

(B) Height displacement of B will be less than that of A

(C) Height displacement of A and B is equal

(D) Height displacement of A and B will be towards each other

128. The most widely used antenna in GPS is :

(A) Parabolic antenna

(B) Microstrip antenna

(C) Horn antenna

(D) Slotted antenna

129. "An Electromagnetic wave falls on to a boundary between two less homogeneous media with different refractive indices and a part of the wave is reflected back to the incident medium and the rest is transmitted on to the second media." This phenomenon is known as :

(A) Fresnel reflection

(B) Fresnel refraction

(C) Snell's law

(D) Spectral reflectance

130. The normal altitude of GPS satellite is about :

- (A) 16,200 km
- (B) 20,200 km
- (C) 24,400 km
- (D) 36,100 km

131. For interpolation of satellite data used for monitoring dynamic changes that occur on the earth surface, the most suitable orbit for the satellite is :

- (A) Circular orbit
- (B) Sun-synchronous orbit
- (C) Near polar orbit
- (D) None of these

132. The ratio of the total solar radiant energy returned by a planetary body to the total radiant energy incident on the body is called :

- (A) Reflectance
- (B) Reflectance factor
- (C) Albedo
- (D) None of these

133. The maximum sun's radiation occurs around :

- (A) 0.4  $\mu$ m wave length
- (B) 0.55  $\mu$ m wave length
- (C) 0.7  $\mu$ m wave length
- (D) None of these

134. The resolution (m) of LISS-IV Resourcesat-1 is :

- (A) 5.8 m
- (B) 23.5 m
- (C) 56 m
- (D) 70.5 m

135. The art and science of manipulation of digital data including enhancement, classification and rectification is known as :

- (A) Orthorectification
- (B) Image processing
- (C) Rectification
- (D) Geometric correction

136. A geographic field is a phenomenon where for every point in the study area :
- (A) A value can be determined
  - (B) A value can not be determined
  - (C) A value is not relevant
  - (D) A value is missing
137. Interpolation is made possible by a principle called :
- (A) Spatial Autocorrelation
  - (B) Spatial auto-correction
  - (C) Thematic Autocorrelation
  - (D) Thematic auto-correction
138. In GIS application, SDI stands for :
- (A) Spatial Data Interface
  - (B) Spatial Data Infrastructure
  - (C) Spatial Data Intention
  - (D) Spatial Data International
139. The process of using data points with known values to estimate values at unknown points in any given area is called :
- (A) Spatial Prediction
  - (B) Spatial Interpolation
  - (C) Spatial Adjustment
  - (D) Spatial Reflection
140. How a large city generally appears on a 1 : 25,000 scale map ?
- (A) As a single point
  - (B) As a cluster of points, lines and polygons
  - (C) As a polygon
  - (D) As a cluster of points
141. What does 1 mm on a map drawn at a scale of 1 : 50,000 represent on the ground ?
- (A) 50 centimetres
  - (B) 5 metres
  - (C) 50 metres
  - (D) 500 centimetres
142. What does the abbreviation DBMS stand for ?
- (A) Digital Base Mapping System
  - (B) Data Borrowing and Movement Software
  - (C) Database Management System
  - (D) Database Manipulation Software

143. For which of the following applications, the buffer operation can be used in GIS ?

- (A) Calculating the distance from one point to another
- (B) Calculating the area of overlap between two polygon data layers
- (C) Determining the area within a set distance from a point, line or area feature
- (D) Calculating the number of observations within a set distance of a point line or area feature

144. A GIS is "a set of tools for collecting, storing, retrieving, transforming and displaying spatial data from the real world for a particular use" as defined by:

- (A) David Rhind (1991)
- (B) Peter Burrough (1986)
- (C) Mike Goodchild (1997)
- (D) Roger Chorley (1987)

145. What is reclassification ?

- (A) The process of combining one or more data ranges into a new data range to create a new data layer

- (B) An analytical technique based on point data
- (C) The process of simplifying data in a data layer
- (D) The process of combining two or more data layers

146. What is 'point-in-polygon' overlay ?

- (A) A method interpolating point data
- (B) An overlay method used to determine the distance between a point and its nearest neighbouring polygon
- (C) An overlay method used to reclassify polygon data
- (D) An overlay method used to determine as to which points lie within the boundary of a polygon

147. A matrix of cells organized into rows and columns containing a value representing some information is called :

- (A) Crystal
- (B) Raster
- (C) Segment
- (D) Polygon

148. Which of the following is not a type of map projection ?

- (A) Cylindrical
- (B) Conic
- (C) Azimuthal
- (D) Geographic

149. Cartographic modeling is :

- (A) The sequence of modeling of real world entities in a GIS database
- (B) A way of expressing and organizing methods by which spatial operations are selected and used to develop a GIS model

(C) A generic method of creating a GIS map data structure

(D) The modeling of map inputs to a GIS, using programming language

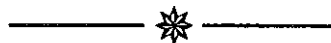
150. Data stream means :

(A) The process by which raw spatial data is processed into an integrated GIS database

(B) The flow of data from one user to another

(C) The process by which maps are transferred between GIS platforms

(D) The flow of data from user to GIS platform



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