

14 — GEO-INFORMATICS

(Answer ALL questions)

56. According to Stefan-Boltzman law, total radiant exitance from the surface of a material is directly proportional to
1. Absolute temperature of the material
 2. Square of absolute temperature of the material
 3. Cube of absolute temperature of the material
 4. Fourth power of absolute temperature of the material
57. The maximum spectral radiant exitance from earth features occurs at a wavelength of
1. about $0.7 \mu\text{m}$
 2. about $1.7 \mu\text{m}$
 3. about $9.7 \mu\text{m}$
 4. about $19.7 \mu\text{m}$
58. Sky appears in blue colour due to
1. Selective scattering
 2. Mie scattering
 3. Surface scattering
 4. Non-selective scattering
59. Plant reflectance in the range of 0.7 to $1.3 \mu\text{m}$ results generally from the
1. Water content in the plant
 2. Cell structure of the plant
 3. Age of the plant
 4. Chlorophyll in the plant
60. The wavelength range of near-IR waves is
1. $0.4-0.7 \mu\text{m}$
 2. $0.7-1.3 \mu\text{m}$
 3. $1.0-5.7 \mu\text{m}$
 4. $1.4-15 \mu\text{m}$
61. The most important source of electromagnetic radiation in passive remote sensing is
1. Moon
 2. Earth
 3. Space
 4. Sun
62. The most often used signature in optical-IR remote sensing is
1. Spectral variation
 2. Seasonal variation
 3. Earth rotation variation
 4. Satellite position variation
63. The orbital period of geo-synchronised satellite is
1. One sidereal day
 2. One solar day
 3. 28 sidereal days
 4. 28 solar days
64. Earth remote sensing satellites are mostly
1. Geo-synchronised satellites
 2. Sun synchronized satellites
 3. Geo-stationary satellites
 4. Geo-synchronised, sun synchronized and geo-stationary satellites
65. Which of the following scale of measurement may be used to represent area?
1. Interval
 2. Ratio
 3. Nominal
 4. Ordinal

66. Which one of the following is not a raster data structure?
1. Run-length encoding
 2. Spaghetti
 3. Quadtree
 4. Block encoding
67. The XML-based universal data standard recommended by the Open GIS Consortium is
1. NTF
 2. HTML
 3. GML
 4. SDTS
68. Which of the following might be considered as the fourth dimension in GIS?
1. Location
 2. Scale
 3. Space
 4. Time
69. Reclassification is defined as
1. The process of combining two or more data layers
 2. The process of simplifying data in a data layer
 3. The process of combining one or more data ranges into a new data range to create a new data layer
 4. An analytical technique based on point data
70. Which of the following overlay methods would you use to calculate the length of road within a forest polygon?
1. Erase
 2. Line-in-polygon
 3. Point-in-polygon
 4. Union
71. Point-in-polygon overlay method can be used to
1. Interpolate point data
 2. Determine the distance between a point and its nearest neighbouring polygon
 3. Determine which points lie within the boundary of a polygon
 4. Reclassify polygon data
72. Aspect is defined as
1. The direction of the fall line relative to the line of greatest slope
 2. The direction of the fall line relative to north
 3. The percentage gradient of this line averaged over its full distance
 4. The gradient of the fall line
73. The two important parameters obtained from remote sensing for operational fisheries forecast are
1. Upwelling and salinity
 2. SST and amount of chlorophyll
 3. Ocean currents and wind speed
 4. Primary and secondary productivity
74. The scale of _____ is used for preparing national or state level land cover/land use maps
1. 1:15
 2. 1:250000
 3. 1:50000
 4. 1:25000

75. Which of the following sensor is widely used for study about the Himalayan snow cover?
1. CARTOSAT
 2. QUICKBIRD
 3. KALPANA
 4. MODIS
76. $(\text{Green reflectance} - \text{SWIR reflectance}) / (\text{Green reflectance} + \text{SWIR reflectance}) =$
1. NDSI
 2. NDVI
 3. EVI
 4. GARI
77. The movement of the projector in y-direction introduces in the model a y-parallax
1. Maximum at position 5 and 6
 2. Minimum at position 5 and 6
 3. Equally throughout the model
 4. Maximum at position 3 and 4
78. The point where a vertical line through the optical center of the camera lens intersects the ground is known as
1. Ground principal point
 2. Ground plumb point
 3. Ground perspective center
 4. Ground isocenter
79. An aerial photograph may be assumed as
1. Central projection
 2. Conical projection
 3. Parallel projection
 4. Orthogonal projection
80. The scale of the photography taken from a height of 3000 m with a camera of focal length 150 mm is
1. 1 : 5,000
 2. 1 : 50,000
 3. 1 : 2,000
 4. 1 : 20,000
81. The flying height of the camera is 1000 m above mean ground level, the distance of the top of a tower from a nadir point is 100 mm and the relief displacement is 7.2 mm. The height of the tower is
1. 72 m
 2. 82 m
 3. 62 m
 4. 52 m
82. What does 1 mm on a map drawn at a scale of 1:50,000 represent on the ground?
1. 500 centimetres
 2. 50 centimetres
 3. 50 metres
 4. 5 metres
83. Which of the following is not a type of map projection?
1. Conic
 2. Azimuthal
 3. Geographic
 4. Cylindrical
84. Map Projections attempt to correct for errors in
1. Area, Distance, Scale and Proportion
 2. Area, Distance, Shape and Direction
 3. Distance, Proximity, topology
 4. Distance, Shape and Lines of Latitude and Longitude

85. To a Cartographer 1:250,000 is a
1. Small Scale
 2. Large Scale
 3. Medium Scale
 4. Low Scale
86. What type of map is most commonly used to map temperature data?
1. Dot
 2. Flow
 3. Isothermic
 4. Choropleth
87. The basic principle of surveying is to work from
1. Part to the whole
 2. Whole to the part
 3. Higher level to lower level
 4. Lower level to higher level
88. A final route will be selected based on the
1. Detailed survey
 2. Location survey
 3. Preliminary survey
 4. Reconnaissance survey
89. Reciprocal ranging is used when alignment is to be done across
1. A big river
 2. A pond
 3. A tall building
 4. Two stations when there is no inter-visibility
90. Buildings are set on the ground by
1. The inner line of each wall
 2. The outer line of each wall
 3. The central line of each wall
 4. The inner and outer line of each
91. O_1, O_2, O_3 are three consecutive offsets at common distance 'd' apart. The area of the strip by Simpson's rule is
1. $d/3 (O_1 + O_2 + O_3)$
 2. $d/3 (O_1 + 2O_2 + O_3)$
 3. $d/3 (O_1 + 3O_2 + O_3)$
 4. $d/3 (O_1 + 4O_2 + O_3)$
92. The dip of the magnetic needle at the equator will be
1. towards north pole
 2. towards south pole
 3. towards east / west
 4. neutral
93. The method by which an instrument station is established with reference to two points already plotted on the drawing paper is called
1. Radiation
 2. Intersection
 3. Resection
 4. Triangulation
94. Survey that deals with the measurements in vertical planes is
1. Horizontal survey
 2. Vertical survey
 3. Inclined survey
 4. Levelling
95. The technique used for reducing the speckle without losing spatial detail
1. Moving window filters
 2. Multi-looking
 3. Temporal averaging
 4. Frequency filters

96. Frequency adopted for RISAT data?
1. 5.36 GHz
 2. 23.5 GHz
 3. 13.6 GHz
 4. 1.3 GHz
97. The constructive and destructive interference from the multiple scattering returns that occur within each resolution cell is called
1. Surface roughness
 2. Speckle
 3. Volume scattering
 4. None of the above
98. The first experimental space borne SAR programme
1. JERS-1
 2. ERS-1
 3. SEASAT-A
 4. RADARSAT-1
99. NISAR is expanded as
1. NASA-ISRO Synthetic Aperture Radar
 2. NASA-Indian Synthetic Aperture Radar
 3. NASA Interferometric Synthetic Aperture Radar
 4. NASA Indian Space Atmospheric Radar
100. Scatterometers are used to measure the _____ based on the _____ backscattering principle
1. Near surface winds and bragg
 2. Winds 10 meter above the sea surface and Facet
 3. Surface winds and Clapp
 4. Winds 6 meter above the sea surface and bragg
101. The very first polarimetric mission designed is
1. SIR A
 2. SIR B
 3. SIR C
 4. RISAT
102. ISODATA stands for
1. Iterative Self-Organizing Data Analysis Technique
 2. Interactive Self-Organizing Data Analysis Technique
 3. Interpolating Organizing Data Analysis Technique
 4. Information Organizing Data Analysis Technique
103. Command used for correcting the sliver polygons
1. Identity
 2. Eliminate
 3. Rubber sheeting
 4. Masking
104. End member in hyper spectral remote sensing is
1. Pure Pixel
 2. Mixed Pixel
 3. Linear Pixel
 4. Non linear pixel
105. In principal component transformation of image the first principal component mostly refers to
1. Overall noise
 2. Overall brightness
 3. Spatial variation
 4. Spectral correlation

106. Fourier transform operates in which of the following domain
1. Chromacity Plot
 2. Band spectral scatter Plot
 3. Frequency spectrum
 4. Spatial domain
107. How many different shades of grey are there in a colour RGB system in which each RGB image is an 7-bit image?
1. 256
 2. 128
 3. 124
 4. 126
108. Which of the following index is generally used for yield forecast model?
1. NDVI
 2. SAVI
 3. Soil brightness index
 4. NDWI
109. Separability of a image class depends on
1. Image statistics
 2. The difference in spectral property of the image features at a particular band
 3. Number of training sites
 4. All the above
110. Histogram equalization increases the
1. Color variations in the image
 2. The brightness of the image
 3. Color depth of the image
 4. Resolution of the image
111. When doing a linear contrast stretch, the count of unique digital numbers in a band
1. Increases
 2. Increases but limited to 255
 3. Does not change
 4. None of the above
112. Which one of the following crop shows improved crop separability in SWIR?
1. Gram
 2. Banana
 3. Sugarcane
 4. Rice
113. Identify the method which is not used earlier to compile forest information
1. Panchromatic
 2. B and W IR
 3. CIR photographs
 4. Visual spotting
114. Dense forest contain crown cover of
1. <40%
 2. >40%
 3. 10%-40%
 4. <10%
115. Land and Water can be easily distinguished in the region of
1. Infra red
 2. Middle infrared
 3. Near infrared
 4. None of the above