PART–B
REMOTE SENSING

51. The minimum number of satellites needed for a GPS to determine its position precisely is
    (A) 2
    (B) 3
    (C) 4
    (D) 24

52. The angle between the observer's meridian and declination circle of the heavenly body is referred to as:
    (A) Azimuth
    (B) Declination
    (C) Sidereal angle
    (D) Hour angle

53. Which one is the reference datum?
    (A) Geographical Information System
    (B) WGS84
    (C) UTM
    (D) Latitude and Longitude

54. The reflectance from a surface is called specular reflection if it follows:
    (A) Snell's law
    (B) Lambert's cosine law
    (C) Planktan's law
    (D) All of these

55. A perfectly black body:
    (A) Is a diffuse emitter
    (B) Absorbs all the radiations of every wavelength
    (C) Emits power of every wavelength
    (D) All the above

56. The point just vertically below the satellite camera center position is called_____.
    (A) celestial point
    (B) Nadir
    (C) Zenith
    (D) Pole

57. The observations made over the same area on different dates to monitor certain ground object like crop growth is called
    (A) Temporal resolution
    (B) Radiometric resolution
    (C) Spatial resolution
    (D) Spectral resolution

58. The most used antenna in GPS is
    (A) Slotted antenna
    (B) Microstrip antenna
    (C) Parabolic antenna
    (D) Horn antenna

59. A raster layer in GIS environment is one which gives information on

(A) Selected points in a region

(B) Specified areas

(C) Attributes of all pixels

(D) Colours of selected places

60. The elevation of a geostationary satellite from the earth is about

(A) 30,000 km

(B) 36,000 km

(C) 26,000 km

(D) 44,000 km

61. The remote sensing data has errors due to which of the following:

(a) Imaging characteristics of the sensor

(b) Stability and orbit characteristics of the platform

(c) Motion of the earth

(d) Atmospheric effects

(A) (a), (b), (c) and (d)

(B) (a), (c) and (d)

(C) (a), (b) and (d)

(D) (c) and (d)

62. Which of the error is caused by the presence of high buildings in GNSS measurement?

(A) Multipath Effect

(B) Receiver related error

(C) Clock Error

(D) Signal propagation Error

63. Which is the best approximation surface representing our earth

(A) WGS 84

(B) Geoid

(C) Ellipsoid

(D) MSL

64. Which of the following types of resolution corresponds to the smallest difference in reflectance recorded by a remote sensing satellite?

(A) Spectral resolution

(B) Radiometric resolution

(C) Temporal resolution

(D) Spatial resolution

65. The relation between velocity, wavelength and frequency can be given as _____

(A) $\lambda = c / r$

(B) $\lambda = c / f$

(C) $\lambda = c / h$

(D) $\lambda = h*c / f$

66. In visible region, the blue light is having a wavelength range of _____

(A) 0.42-0.52 micrometer

(B) 0.24-0.52 micrometer

(C) 0.42-0.92 micrometer

(D) 0.22-0.32 micrometer

67. Among the following, which describes Stefan-Boltzmann formula?

(A) M = σ/T4

(B) M = σ–T4

(C) M = σ+T48.

(D) M = σ*T4

68. Which of the following is not a classification of scattering principle?

(A) Faraday scattering

(B) Rayleigh scattering

(C) Mie scattering

(D) Non-selective scattering

69. Polar orbiting satellites are generally placed at an altitude range of _____

(A) 7-15 km

(B) 7000-15000 km

(C) 700-1500 km

(D) 70-150 km

70. Which of the following has the maximum value in an electric or magnetic field?

(A) Wavelength

(B) Focal length

(C) Frequency

(D) Amplitude

71. Determine the wavelength if the frequency is given as 67 Hz.

(A) 1.044*108 m

(B) 0.044*108 m

(C) 0.44*108 m

(D) 0.044*1010 m

72. Find the value of energy if the wavelength is given as 43m.

(A) 0.46*10-26 J

(B) 0.46*10-26 J

(C) 0.46*10-26 J

(D) 0.46*10-26 J

73. If the intensity of wavelength decreases, the energy released will _____

(A) Increase

(B) Decrease

(C) Remain same

(D) Zero

74. Which of the following is not a principle related to remote sensing?

(A) Interaction of energy with satellite

(B) Electromagnetic energy

(C) Electro-magnetic spectrum

(D) Interaction of energy with atmosphere

75. Pick up the correct statement from the following:

(A) Topology describes the geometric characteristic of objects which do not change under transformations and are independent of any coordinate system

(B) Topological characteristics of an object are independent of scale measurement

(C) The three elements of topology are adjacency, containment, and connectivity

(D) All of these

76. Which one of the following statements is correct?

(A) During the day, earth reflects solar radiation

(B) During the day, earth reflects both solar radiations the emission from its surface

(C) During the night, earth emits radiation from its surface

(D) All of these

77. Which one of the following statements is incorrect regarding the electromagnetic radiation?

(A) These are produced by the motion of electric charge

(B) The oscillation of charged particles sets up changing electric fields

(C) The changing electric fields induce the changing magnetic fields in the surrounding medium

(D) None of these

78. Which one of the following statements is correct?

(A) Radiant energy expressed in Joules, is the energy associated with electromagnetic radiation

(B) The rate of transfer of radiant energy is called flux and is expressed in watts

(C) The radiant energy which falls upon a surface is termed as irradiance

(D) All of these

79. Which one of the following statements is correct?

(A) π radians equal to 180°

(B) The cone subtended by an area on the sphere at the centre, is called the solid angle

(C) The solid angle is equal to the ratio of the area on the sphere and the square of the radius of the sphere

(D) All of these

80. 'A time varying electric field produces a magnetic field.' This phenomenon is called:

(A) Hertz's law

(B) Ampere Maxwell's law

(C) Faraday's law

(D) Kirchoff's law

81. The changes in the reflectivity/emissivity with time, is called:

(A) Spectral variation

(B) Spatial variation

(C) Temporal variation

(D) None of these

82. For interpolation of satellite data used for monitoring dynamic changes that occurs 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

83. Which one of the following quantities forms the basis of radiometry?

(A) Radiant energy (Q)

(B) Radiant flux (ϕ)

(C) Radiant intensity (I)

(D) All of these

84. According to the Snell's law if an electromagnetic wave is incident in a medium (refractive index n1) on another medium (refractive index m2);

(A) The angle of incidence is equal to the angle of refraction

(B) The angle of refraction (θr) is given by $\sin \theta_2 = (n_1/n_2) \sin \theta i$

(C) Both (A) and (B)

(D) Neither (A) nor (B)

85. The refractive index of the ocean water:

(A) Increases with salinity

(B) Increases with temperature

(C) Decreases with salinity

(D) Decreases with temperature

86. Pick up the correct definition from the following with in view of GIS.

(A) Common boundary between two areas of a locality is known as adjacency

(B) The area features which are wholly contained within another area feature, is known so containment

(C) The geometric property which describes the linkage between line features is defined as connectivity

(D) All of these

87. The various stages occurring in GPS system are described below:

1. Generation of an output to the user
2. Detection of the GPS signals
3. Processing the data in the built-in-computer
4. Decoding the GPS signal.

The correct sequence of the stages is:

(A) 1, 2, 3, 4

(B) 2, 3, 4, 1

(C) 2, 4, 3, 1

(D) 3, 1, 2, 4

88. Which is this combination of Bands you can use for detection of healthy vegetation

(A) NIR and Blue

(B) SWIR and RED

(C) NIR and Red

(D) NIR and SWIR

89. Which on these are non-directional filters:

(A) Sobel

(B) Canny

(C) Laplacian

(D) All of these

90. The arrangement of terrain features which provides attributes: the shape, size and texture of objects, is called:

(A) Spectral variation

(B) Spatial variation

(C) Temporal variation

(D) None of these

91. We can use _____to combine the characteristics of several datasets into one?

(A) GPS

(B) Overlay Analysis

(C) Band Addition

(D) All of these

92. A _____ is an approximate representation of the distribution of numerical data.

(A) Graph

(B) Spectral Response

(C) Histogram

(D) Feature Space

93. Which one of these classification give percentage of class distribution in a pixel in LULC mapping

(A) Sub-Pixel Classification

(B) Per Pixel Classification

(C) OBIA

(D) All of above

94. Selection of disposal sites for industrial and municipal wastes can be done in GIS using:

(A) Image classification

(B) Weighted analysis

(C) Onscreen Digitization

(D) All of these

95. Unmanned Aerial Vehicle uses which method to generation of DEM?

(A) Structure from Motion

(B) Oblique Photogrammetry

(C) Nadir Photogrammetry

(D) All the above

96. WMS stand for in context of GIS:
(A) Website Management Service
(B) Web Map Service
(C) Website Mapping Service
(D) None of these

97. In case of Stratified random sampling which statement is correct:
(A) A stratified random sampling involves dividing the entire population into non-homogeneous groups called strata (plural for stratum). Random samples are then selected from each stratum.
(B) A stratified random sampling involves dividing the entire population into homogeneous groups called strata (plural for stratum). Random samples are then selected from each stratum.
(C) A stratified random sampling involves dividing the entire population into non-homogeneous groups called strata (plural for stratum). Samples are then selected from each stratum.
(D) All of these

98. A second family of interpolation methods consists of geostatistical methods, which are based on statistical models that include autocorrelation-that is, the statistical relationships among the measured points. This statement is true for
(A) IDW (inverse distance weighted) interpolation
(B) Kriging interpolation
(C) Spline interpolation
(D) All of these

99. 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

100. The SAR images can be acquired in which polarizations?
(A) HH, VV, VH, HV
(B) H, V
(C) HH, VV
(D) VH and HV

ROUGH WORK

Answer Key: Remote Sensing

51. Option C
52. Option D
53. Option B
54. Option A
55. Option D
56. Option B
57. Option A
58. Option B
59. Option D
60. Option B
61. Option A
62. Option A
63. Option B
64. Option B
65. Option B
66. Option A
67. Option D
68. Option A
69. Option C
70. Option D
71. Option B
72. Option D
73. Option A
74. Option A
75. Option D
76. Option D
77. Option D
78. Option D
79. Option D
80. Option B
81. Option C
82. Option B
83. Option D
84. Option B
85. Option A
86. Option D
87. Option C
88. Option C
89. Option D
90. Option B

91. Option D
92. Option C
93. Option A
94. Option B
95. Option A
96. Option B
97. Option B
98. Option B
99. Option B
100. Option: A