Electromagnetics Questions- 2019

1. Magnetic field is produced by

a) stationary charge

b) moving charge

c) both stationary and moving charge

d) none of the mentioned

2. The unit of electric field intensity is

a) Tesla

b) V/m

c) N/C

d) not defined

3. Magnetic force on a electric charge is zero when

a) only when charge is at rest

b) only when charge is moving parallel to field

c) when charge is at rest or when is moving parallel to field.

d) not defined

4. The work done by the static electric field around a closed path

a) always positive

b) always zero

c) always negative

d) not defined

5. Curl of a uniform electric field is

a) not defined

b) zero

c) always negative

d) positive

6. Electric potential at a given point due to a electric dipole is inversely proportional to

a) the distance

b) the square of the distance

c) product of charges

d) the cube of distance

7. Displacement current is due to

a) time varying electric field

b) time varying magnetic field.

c) constant magnetic field

d) the cube of distance

8. The unit of electric dipole moment is

a) Ampere-meter

b) Coulomb-meter

c) Tesla

d) the cube of distance

9. Impedance of free space is

a) zero

b) 100 ohm

c) 377 ohm

d) the cube of distance

10. Vortex electric field is produced by

a) Time varying magnetic field

b) Time varying electric field

c) constant magnetic field

d) constant electric field

11. Faraday's law states that the induced EMF is

a) Proportional to the change in magnetic flux linkage.

b) Equal to the negative rate of change of magnetic flux linkage with respect to time

c) Equal to the negative change in magnetic flux linkage

d) Equal to the change of magnetic flux

12. Two thin parallel wire carrying currents along the same direction. The force experienced by one due to the other is

a) Parallel to the lines.

b) Perpendicular to the lines and attractive.

c) Perpendicular to the lines and repulsive.

d) Equal to the change of magnetic flux

13. For an electromagnetic wave, the direction of vector cross product of electric and magnetic field gives the direction of

a) electric field.

b) magnetic field.

c) phase velocity

d) Equal to the change of magnetic flux

14. The force between the two charges is F Newnons. When the distance between the two charges is doubled, the force is

a) F/4

b) 4F

c) F/2

d) 2F

15. The electric field line and equipotential surfaces are

a) always parallel.

b) inclined at any angle.

c) always at 45 degree.

d) always at 90 degree.

16. A sheet of mica is inserted between the plates of a parallel plate capacitor, then the capacitance will

a) decrease

b) become zero

c) increase

d) remain same

17. When a conductor is placed in external electric field, the field inside the conductor is

a) less than external field.

b) more than external field

c) zero

d) remain same

18. When a dielectric material is kept in external electric field, the field inside the dielectric is

a) less than the external field

b) more than the external field

c) zero

d) remain same

19. The unit of relative permittivity

a) Farad-meter

b) Farad/meter

c) Farad

d) it is dimensionless.

20. The material that can be used for shelding or screening the magnetic field is

a) plastic

b) mica

c) wood

d) copper

21. A point is represented in Cartesian coordinate as P(2,6,3),the radial component ρ in cylindrical coordinate will be

a) less than r in spherical coordinates

b) greater than r in spherical coordinates

c) equal to r in spherical coordinates

d) unrelated to r in spherical coordinates

22. By saying that the electrostatic field is conservative, we mean that

a) it is curl of the scalar potential

b) it is product of the scalar potential and distance

c) it is sum of the scalar potential and distance

d) it is gradient of the scalar potential

23. Stokes theorem relates

a) surface integral and line integral

b) surface integral and volume integral

c) volume integral and contour integral

d) line integral and volume integral

24. Under electrostatic equilibrium conditions where does the excess charges lie in a conductor?

a) on the surface of the conductor

b) only inside the conductor and not on surface.

c) at the centre of the conductor

d) outside the conductor

25. The electric potential difference between two points in a electric field is the

a) work done in moving unit charge between the two points.

b) difference between the forces at the two points.

c) change in momentum of charge between two points.

d) work done in moving arbirary charge between the two points

26. Point charges 30nC,-20nCand 10nC are located at (-1,0,2),(0,0,0) and (1,5,-1), respectively. The total flux leaving a cube of side 6m centered at the origin is

a) -20nVm

b) 10nVm

c) 20nVm

d) zero

27. The electric flux density on a spherical surface of radius r=b is the same when a point charge Q located at the origin and in the second case when the charge Q uniformly distributed on surface r=a (a<b)

a) yes

b) No

c) Not necessarily

d) zero

28. Suppose a uniform electric field exists in the room in which you are working, such that the lines of force are horizontal and at right angles to one wall. As you walk toward the wall from which the lines of force emerge into the room, are you walking toward

a) Points of higher potential

b) Points of lower potential

c) points of constant potential

d) It will be higher

29. When a potential difference is applied across human heart, its behaviour can be modeled as that of electric dipole. Abnormal hearts can be detected by mapping

a) equipotential surfaces

b) Points of lower potential

c) Not necessarily

d) It will be higher

30. Inside a hollow conducting sphere which is kept in a external electric field

a) electric field is zero

b) constant but non zero

c) electric field increase

d) electric field decrease

31. The magnetic flux density (B) and a vector magnetic potential (A) are related by

a) B=▼ X A

b) electric flux lines

c) electric fields

d) B=▼A

32. Of the following,the incorrect relation is

a) D=εE

b) B=μH

c) J=σE

d) B=μE

33. Two potential junctions V1 and V2 satisfy Laplace equation within a closed region and assume the same values on its surface, then

a) V1 must be equal to V2

b) V1<V2

c) V1>V2

d) B=μE

34. Faraday's law is valid for both open and closed loops. The Lenz's law is valid for

a) Only open loop

b) only closed loop.

c) both open and closed loop

d) multiple open loop

35. An electric charge Q is placed in a dielectric medium. Which one of the following quantities are independent of the dielectric constant ε of the medium.

a) Electric potential V

b) only closed loop.

c) both open and closed loop

d) multiple open loop

36. The Poynting Vector has the dimensions of

a) Power/Unit area

b) Volts

c) Power

d) Volt/Unit length

37. Two thin parallel wires are carrying current in opposite direction. The force experienced by one due to other is

a) repulsive force

b) zero force

c) attractive force

d) none of the mentioned

38. An electric potential field is produced in air by point charges 1μc and 4μc located at (-2,1,5) and (1,3,1) respectively. The energy stored in the field is

a) 2.57mJ

b) 5.14mJ

c) 10.28mJ

d) 12.5mJ

39. Laplacian of a scalar function V is

a) always zero

b) proportional to charge density

c) proportional to current

d) none of the mentioned

40. The capacitance of the parallel plate capacitor is given by $\varepsilon_o\varepsilon_r(A/d)$ where A is the area of each plate and d is the distance between the plates. Considering fringing field, under which of the following conditions is the above expression valid?

a) A/d is tending towards 0

b) A/d is tending towards infinity

c) A/d is 1

d) A/d is 1/εoεr

41. The force between two point charges of 1 nC each with a 1 mm seperation in air is

a) 9 mN

b) 9N

c) 90N

d) 9000N

42. Which one is the source of magnetic field

a) constant electric field

b) time-varying electric field

c) constant electric potential

d) stationary electric charges

43. For an electromagnetic wave incident on a conducting medium, the depth of penetration is given by

a) wave length of wave

b) skin depth

c) conductivity of conducting medium

d) none of the mentioned

44. A parallel plate capacitor of 5pf capacitance has a charge of 0.1μC on its plates. What is the energy stored in the Capacitor?

a) 10mJ

b) 1mJ

c) 1J

d) 1kJ

45. What does the expression J.A where J current density and A perpendicular cross sectional are through which current flows

a) total electric field

b) total current

c) potential

d) magnetic field

46. Which of the following statements is correct?

a) Both laplace and poisson’s equation are non-linear equations

b) Both laplace and poisson’s equation are linear equations

c) Has logarithmic relationship with the attenuation constant

d) magnetic field

47. A charge of 1 coulumb is placed near a grounded conducting plate at a distanceof 1m. what is the force between them?

a) 1/(4πε0)

b) 1/(8 πεo)

c) 1/(16 πεo)

d) magnetic field

48. What is the effect of earth's magnetic field in the reflected wave at frequencies in the vicinity of gyro-frequency?

a) total attenuation of reflected wave.

b) partial attenuation of reflected wave.

c) No attenuation in the reflected wave

d) none of the mentioned

49. Two small diameter 5g dielectric balls can slide freely on a vertical nonconducting thread.Each ball carries a negative charge of 2μc.If the lower ball is restricted from moving,then the seperation between the two balls will be

a) 8570 mm

b) 857 mm

c) 85.7 mm

d) none of the mentioned

50. What is the magnetic dipole moment in Am for a square current loop having vertices at the points A(10m,0,0), B(0,10m,0),C(-10m,0,0) and D(0,-10m,0) and with current 1 A flowing in the sense ABCDA?

a) 100

b) 199.9

c) 1000

d) 19.9

51. A quarter wave transmission line shorted at the end

a) Has the characteristics of a series tuned circuit

b) Has the characteristics of parallel tuned circuit

c) Has a minimum current at the end

d) Reflects a low impedance to the supply

52. Which value of VSWR indicate best matching of antenna to transmission line?

a) 100

b) infinity

c) 1

d) 0

53. The mode at which a waveguide operates is determined by the

a) shape of the waveguide

b) method used to couple the signal into the waveguide

c) Length of the waveguide

d) 0

54. When does a transmission line have an SWR equal to1?

a) when load is not matched to transmission line

b) when load is matched to transmission line

c) Length of the waveguide 100m

d) impedance of the waveguide 100ohm

55. For a parallel-resonant circuit, quarter wavelength stub must be _____ at the ends.

a) shorted

b) open

c) complex

d) loaded

56. A transmission line of pure resistive characteristic impedance is terminated with an unknown load. The measured value of VSWR on the line is equal to 2 and a voltage minimum point is found to be at the load. The load impedance is then

a) complex.

b) purely capacitive.

c) purely resistive.

d) purely inductively

57. What is the length of a quarter-wave stub, in free space at 4GHz?

a) 19 m

b) 18.75 m

c) 19 cm

d) 18.75 mm

58. A 50 ohm lossless transmission line has a pure reactance of j100 ohms as its load. The VSWR in the line is

a) 1 2 (Half)

b) 2 (Two)

c) 4 (Four)

d) Infinity

59. A matching stub should be placed _____.

a) midway between load and transmitter

b) nearest to the load

c) nearest to transmitter

d) Anywhere

60. What would be the SWR of a transmission line if power is being delivered to a 75Ω load by a line with a characteristic impedance of 50Ω?

a) 4

b) 1/5

c) 5

d) 10

61. A quarter-wave stub shorted at the end has high impedance

a) at the shorted end

b) quarter wavelength from the short end

c) half wavelength from the short end

d) at the center

62. A lossless transmission line having 50Ω characteristic impedance and length λ / 4 is short circuited at one end and connected to an ideal voltage source of 1 V at the other end. The current drawn from the voltage source is

a) 0

b) 0.02 A

c) Infinity

d) None of thes

63. The characteristic impedance of a coaxial transmission line does not depend upon its _____.

a) length

b) conductor diameter

c) conductor spacing

d) conductor radius

64. A 300 ohm line is terminated to a load impedance of 100 + j200 ohm. What is the reflection coefficient for this line?

a) 0.85<212.1°

b) 1

c) 1.2

d) 0.90<901°

65. A flat transmission line delivers 5 kW at 10 A. What is its impedance?

a) 50 Ohms

b) 20 Ohms

c) 200 Ohms

d) 500 Ohms

66. Which one is used in higher frequency range, coaxial cable or rectangular wave guide or parallel wires.

a) rectangular waveguide

b) coaxial cable

c) parallel wires

d) none of the mentioned

67. The VSWR can have any value between

a) 0 and 1

b) – 1 and +1

c) 0 and infinite

d) 1 and infinite

68. A rectangular waveguide acts as a

a) Low Pass Filter

b) balanced line

c) strip line

d) waveguide

69. What is condition of distortionless line for a tranmission line model having primary per unit parameters R,L,G and C

a) RL=GC

b) RC=GL

c) RG=CL

d) None of the mentioned

70. A transmission line has a characteristic impedance of 50 ohm and a resistance of 0.1 ohm/m . If the line is distortionless, the attenuation constant (in Np/m) is

a) 500

b) 5

c) 0.014

d) 0.002

71. Which statement is incorrect

a) Phase velocity inversaly proportional to phase constant

b) Phase velocity dirctly proportional to frequency

c) Phase velocity inversaly proportional to phase constant and directly proportional to frequency

d) Phase velocity directly proportional to permeability

72. A transmission line with a characteristic impedance of 100 ohm is used to match a 50 ohm section to a 200 ohm section. If the matching is to be done both at 429 MHz and 1 GHz, the length of the transmission line can be approximately

a) 82.5 cm

b) 1.05 m

c) 1.58 m

d) 1.75 m

73. A rectangular air – filled waveguide has a cross section of 4cm × 10cm.

The minimum frequency which can propagation in the waveguide is

a) 1.5 GHz

b) 2.0 GHz

c) 2.5 GHz

d) 3.0 GHz

74. Which among the following is also regarded as Twin-lead transmission line?

a) underground cable

b) coaxial cable

c) Open-wire

d) wave guide

75. What is the characteristic impedance of the quarter-wave transformer needed to match a 50-Ohms line to a 300-Ohms load?

a) 122 ohms

b) 200 Ohms

c) 312 Ohms

d) 400 Ohms

76. In a given coaxial cable, the characteristic impedance depends on

a) does not depend on dimensional of coaxial cable

b) dimensions of the coaxial cable

c) always equal to 1

d) none of the mentioned

77. Distance travelled by a wave in the time of one cycle.

a) Crest

b) Wavelength

c) Frequency

d) Hop

78. For a transmission line with propagation constant $\gamma = 0.650 + j\ 2.55$, what will be the value of phase velocity for 1 kHz frequency?

a) 2460 km/sec

b) 1180 km/sec

c) 2180 km/sec

d) 180 km/sec

79. Indicate which one of the following modes do NOT exist in a rectangular

resonant cavity

a) TE110

b) TE011

c) TM110

d) MT111

80. At which angles does the front to back ratio specify an antenna gain?

a) 0° & 180°

b) 90° & 180°

c) 180° & 270°

d) 180° & 360°

81. The term critical frequency in Ionospheric propagation is

a) Lowest frequency reflected by Ionosphere

b) Highest frequency reflected by the Ionosphere at vertical incidence

c) Lowest frequency reflected by the Ionosphere at vertical incidence

d) Lowest communication frequency possible

82. Transmission lines are either balanced or unbalanced with respect to _____.

a) Single line wire

b) Ground

c) Microstrip

d) Twin-lead

83. Skin effect describes the tendency of:

a) ac conductors to carry the circuit current on their surface

b) ac conductors to carry the circuit current at the centre of the conductor

c) dc conductors to carry the circuit current on their surface

d) none of the mentioned

84. A major and basic advantage for the use of a klystron.

a) High power

b) low power

c) dc conductors to carry the circuit current on their surface

d) no power

85. A transmission line capable of handling high-powered signal is _____.

a) coax

b) Waveguide

c) Micro strip line

d) strip line

86. Pulse dispersion in an optical fiber restricts

a) Transmission distance

b) frequency

c) input power

d) The phase changes of propagation light

87. Numerical aperture of an optical fiber represents

a) The cone outside which the light is incident on fiber end

b) frequency

c) input power

d) The phase changes of propagation light

88. The fundamental mode of rectangular wave guide is

a) TE10 mode

b) TE01

c) TE11

d) The phase changes of propagation light

89. The power emitted by an optical source is measured to be 0 dBm. In linear this corresponds to

a) Zero milli-watt

b) One watt

c) 0.1 watt

d) One milli-watt

90. In a semiconductor if the charge carriers can make a transition from conduction band to

Valence band without change in momentum value , the material is known as ---------- material

a) dielectric

b) magnetic

c) indirect bandgap

d) direct bandgap

91. In the case of photodiode, p-i-n structure is preferred rather than p-n structure, because of

a) Fast response

b) Temperature independence

c) Less noise

d) direct bandgap

92. In the structure of fiber optic cable, the refractive index of core is always _____the refractive index of cladding.

a) more than

b) same as

c) Less than

d) none of the mentioned

93. If a noisy channel has a bandwidth of 4 MHz with signal to noise ratio of about 1, what would be the maximum capacity of the channel?

a) 2 Mb/sec

b) LED

c) none of the mentioned

d) APD

94. Which among the following is provided by an optical receiver for the regeneration of data signal with minimum error?

a) photo resistor

b) LED

c) none of the mentioned

d) APD

95. In an optical fiber communication system, which among the following is not a transmitter

a) Laser diode

b) LED

c) none of the mentioned

d) APD

96. Which one is not a detector in optical communication

a) PIN diode

b) APD

c) PD

d) LED

97. If an antenna draws 12 A current and radiates 4 kW, then what will be its radiation resistance?

a) 22.22 ohm

b) 27.77 ohm

c) 33.33 ohm

d) 39.77 ohm

98. Which mode of radiation occurs in an helical antenna due to smaller dimensions of helix as compared to a wavelength?

a) parallel mode

b) Normal mode

c) circular mode

d) none of the mentioned

99. Antenna converts

a) electrical energy into electromagnetic energy

b) heat energy to electrical energy

c) optical energy to heat energy

d) None of the mentioned

100. A dipole carries r.m.s. current of about 300A across the radiation resistance 2 Ω. What would be the power radiated by an antenna?

a) 90 kW

b) 10kW

c) 1kW

d) 1000kW

101. A rectangular horn antenna operating at 4GHz has the wavelength of 0.075m and gain of about 13dBi. What will be its required capture area?

a) 0.0149 meter square

b) 0.0475 meter square

c) 0.5521 meter square

d) . 0.9732meter square

102. In an electrically large loop, an overall length of the loop is equal to _____

a) λ/2

b) λ

c) 10λ

d) none of the mentioned

103. Ideal physical antenna length is _____ than its electrical length.

a) greater

b) smaller

c) equal

d) none of the mentioned

104. Dish antenna (parabolic) is having ..... radiation pattern

a) Bi-directional

b) omni-directional

c) uni-directional

d) none of the mentioned

105. If one or more elements in an antenna array are eletromagnetically connected, it is termed an _____ array.

a) Parasitc array

b) Phased array

c) Isotropic

d) Omni-directional

106. Point source is having ----------radiation

a) Uni-directional

b) Isotropic

c) none of the mentioned

d) Omni-directional

107. Which among the following is regarded as a condition of an ordinary endfire array?

a) $\alpha < \beta d$

b) $\alpha > \beta d$

c) $\alpha = \pm\beta d$

d) $\alpha \neq \pm\beta d$

108. Helical antenna has ---------- polarization

a) Unidirectional

b) omni-directional

c) bidirectional

d) directional

109. The largest frequency that will be returned to earth when transmitted vertically under given ionosphere conditions is called the_____.

a) MUF

b) Circular

c) linear

d) Elliptical

110. In sky propagation the shortest distance covered by the single frequency untouched to the ground is called as_____.

a) line-of -sight

b) Circular

c) linear

d) 73 ohm

111. If the maxima of 10-elements array is directed towards theta=90 degree, It is called _____ array.

a) skip distance

b) broad side

c) 2-ray distance

d) 73 ohm

112. The feed point impedance of the half wave dipole antenna is.....

a) 100 ohm

b) 120 ohm

c) 73 ohm

d) none of the mentioned

113. The radiation prattern is usually measured in .....region.

a) Fraunhofer region

b) Fresnel region

c) all

d) none of the mentioned

114. For an 8 feet(2.4 m) parabolic dish antenna operating at 4GHz, the minimum distance required for the far-field measurement is closest to

a) 7.5 cm

b) 15 cm

c) 15m

d) 150m

115. In the half power beamwidth of the antenna the amplitude falls to a factor of

a) 1/4

b) 2

c) 1/2

d) 1/square root of 2

116. Free space loss does not consits of

a) Diffraction

b) Reflection

c) Noise

d) Dielectric

117. Consider a loss less antenna with directivty gain 6 dB. If 1mW power is fed to the total radiated power by the antenna will be

a) 4mW

b) 1mw

c) Noise

d) 0

118. A transmission line is feeding 1W of power to the Horn antenna having a gain 10 dB. The total power radiated by the antenna into free space is

a) 10W

b) 1mw

c) Noise

d) 0

119. At 20 GHz, the gain of the parabolic dish antenna of 1 meter diameter and 70% efficiency is

a) 15dB

b) 1W

c) 0.1W

d) None of the mentioned

120. Spiral antenna is a

a) Linear polarized antenna

b) Circular Polarized antenna

c) Elliptical Polarized antenna

d) None of the mentioned

121. Microstrip antenna fundamental mode of operation is

a) TM11

b) TM12

c) TM21

d) None of the mentioned

122. For the parasitc Yagi-Uda array, the refector of the antenna is kept at ---------- distance.

a) 1/8 lambda

b) 1/16 lambda

c) 1/4 lambda

d) 1/5 lambda

123. In ionosphere propagation, the refractive index of the layer is ..... to the electron desnsity of the layer.

a) directely proportional

b) constant

c) inversely proportional

d) none of the mentioned

124. In an electrical circuit, which nature of impedance causes the current & voltages in phase?

a) Reactive

b) Resistive

c) Capacitive

d) d. Inductive

125. Frequency range of satellite communication is .....

a) L-Band

b) D-Band

c) A-Band

d) none of the mentioned

126. If the diameter of the halfwave dipole antenna is incresead from lambda/100 to lamba/50 then its

a) Bandwidth increases

b) Bandwidth decreases

c) Gain increases

d) Gain decreses

127. The radiation resistance of a quarterwave antenna is

a) 72 ohms

b) 92 ohms

c) 40 ohms

d) 15 ohms

128. What is the IEEE operating range of GPS

a) 1.5 GHz

b) 5 GHz

c) 2.4 GHz

d) 6 GHz

129. If the input impedance of an antenna is 300 ohms and it is fed with a 600 ohm balanced transmission line, the SWR on the line is

a) 2

b) 1

c) 10

d) 5

130. An antenna having directivity of 2 at a frequecny of 300 MHz will have a maximum effective aperature area of

a) 1/8 (Pi) metersquare

b) 1/(4 xPi) metersquare

c) 1/(2xPi) metesquare

d) 1/pi metersquare

131. The ratio of the reflected voltage to the incident voltage on the transmission line is termed as

a) VSWR

b) loss

c) reflection coefficient

d) standing wave

132. Internal antenna for mobile handset is .....

a) Inverter-F antenna

b) Horn antenna

c) Spiral antenna

d) Dish antenna

133. Under which conditions of two unit vectors, the polarization loss factor (PLF) is equal to unity?

a) Perpendicular

b) Horn antenna

c) Spiral antenna

d) Dish antenna

134. If the maximum electron density for F-layer in ionosphere is 4 x 106 electrons/cm3, then what will be the critical frequency of EM wave for F-layer?

a) 4 MHz

b) 9 MHz

c) 18 MHz

d) 25 MHz

135. The concept used to make one Smith chart universal is called

a) ionization

b) rationalization

c) normalization

d) termination

136. Linear polarization can be obtained only if the wave consists of _____

a) Ex

b) Ey

c) Both Ex & Ey & in phase

d) Both Ex & Ey & out of phase

137. What is the nature of radiation by a infinitely long straight wire with ac current?

a) Spherical

b) plane

c) cylindrical

d) none of the mentioned

138. In retarded potentials, what factor of time delay is generally introduced in A & V equations?

a) R + c

b) R - c

c) R/c

d) R x c

139. According to the geometry, how many sterdians are present in a full sphere?

a) 360

b) pi

c) 4xpi

d) 2xpi

140. Sterdian is a measurement unit of _____

a) Point angle

b) Linear angle

c) Plane angle

d) Solid angle

141. Which pattern is generated due to plotting of square of amplitude of an electric field?

a) current pattern

b) field pattern

c) voltage pattern

d) power pattern

142. What kind of beamwidth is/are produced by Chebyshev arrays for given side lobe level (SLL)?

a) Widest

b) Narrowest

c) Both a and b

d) None of the above

143. In lens antenna, what kind of wave energy is transformed into plane waves?

a) convergent

b) congruent

c) divergent

d) none of the mentioned

144. What would be the depth of penetration for copper at 2 MHz frequency with $\sigma = 5.8 \times 107$?

a) 46.72 μm

b) 56.90 μm

c) 66.08 μm

d) 76.34 μm

145. If an antenna draws 12 A current and radiates 4 kW, then what will be its radiation resistance?

a) 27.77 ohm

b) 22.22 ohm

c) 46 ohm

d) 3 ohm

146. Determine the physical lenght of the horn antenna, if the E-plane aperture is 10λ and delta is 0.2λ

a) 62.5 λ

b) 14 λ

c) 30 λ

d) 0 λ

147. Calculate the distance beyond which the curvature of the earth is accounted at frequency 1MHz in ground wave propagation

a) 50 miles

b) 100 miles

c) 110 miles

d) 200 miles

148. Find the free space loss (basic path loss) for communication between two points 3000 km apart at a frequency of 3 GHz.

a) 171.534 dB

b) 100 miles

c) 110 miles

d) 200 miles

149. The radiation resistance of dipole antenna is

a) 72 ohm

b) 36.5 ohm

c) 377 ohm

d) 50 ohm

150. Calculate the average power available at 1 km distance, if an element radiates maximum in the Θ = 60° and carries maximum current of 5 amp

a) 79.5 µW

b) 80 µW

c) 70 µW

d) 75 µW

----------Key----------

1. (b)

2. (c)

3. (c)

4. (b)

5. (b)

6. (b)

7. (a)

8. (b)

9. (c)

10. (a)

11. (b)

12. (b)

13. (c)

14. (a)

15. (d)

16. (c)

17. (c)

18. (a)

19. (d)

20. (d)

21. (a)

22. (d)

23. (a)

24. (a)

25. (a)

26. (b)

27. (a)

28. (a)

29. (a)

30. (a)

31. (a)

32. (a)

33. (a)

34. (b)

35. (b)

36. (a)

37. (a)

38. (b)

39. (b)

40. (b)

41. (b)

42. (b)

43. (b)

44. (b)

45. (b)

46. (b)

47. (a)

48. (c)

49. (c)

50. (b)

51. (b)

52. (c)

53. (a)

54. (b)

55. (a)

56. (c)

57. (d)

58. (d)

59. (b)

60. (b)

61. (b)

62. (a)

63. (a)

64. (a)

65. (a)

66. (a)

67. (d)

68. (a)

69. (b)

70. (d)

71. (c)

72. (c)

73. (a)

74. (c)

75. (a)

76. (b)

77. (b)

78. (a)

79. (a)

80. (a)

81. (b)

82. (b)

83. (a)

84. (a)

85. (b)

86. (a)

87. (a)

88. (a)

89. (c)

90. (c)

91. (c)

92. (c)

93. (d)

94. (d)

95. (d)

96. (d)

97. (b)

98. (b)

99. (a)

100. (a)

101. (a)

102. (a)

103. (a)

104. (a)

105. (b)

106. (b)

107. (c)

108. (a)

109. (a)

110. (a)

111. (b)

112. (c)

113. (a)

114. (d)

115. (d)

116. (d)

117. (a)

118. (a)

119. (a)

120. (b)

121. (a)

122. (c)

123. (c)

124. (b) (c)

125. (a)

126. (a)

127. (a)

128. (a)

129. (a)

130. (c)

131. (c)

132. (a)

133. (a)

134. (c)

135. (c)

136. (c)

137. (c)

138. (c)

139. (c)

140. (d)

141. (d)

142. (a)

143. (c)

144. (a)

145. (a)

146. (a)

147. (a)

148. (a)

149. (a)

150. (a)