These are sample MCQs to indicate pattern, may or may not appear in examination

University of Mumbai
Online Examination 2020

Program: TE Electronics & Telecommunication Engineering
Curriculum Scheme: Revised 2012
Examination: Third Year Semester V
Course Code: ETC504 and Course Name: RF Modeling and Antennas
Time: 1hour Max. Marks: 50

Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	Which mode of propagation is supported by a strip line?
Option A:	TE11
Option B:	TE
Option C:	TM
Option D:	TEM

Q2.	4π steradian corresponds to _____ square degrees
Option A:	41352
Option B:	12345
Option C:	54321
Option D:	41253

Q3.	Find the radiation resistance of an infinitesimal dipole whose overall length is l = λ/50.
Option A:	0.3166 ohms
Option B:	0.423 ohms
Option C:	1.36 Ohms
Option D:	0.861 ohms

Q4.	For infinitesimal dipole antenna, the nature of current distribution is:
Option A:	triangular
Option B:	sinusoidal
Option C:	constant
Option D:	half-sinusoidal

Q5.	If reflection of an antenna is 0.5 at frequency of 900 MHz, then the percentage power transmitted is
Option A:	10
Option B:	25
Option C:	75
Option D:	80

Q6.	What is the advantage of using ferrite loops?
Option A:	Decrease in Magnetic field intensity
Option B:	Decrease in radiation resistance
Option C:	Increase in Magnetic field intensity
Option D:	Decrease in beam width

Q7.	Folded dipole antenna facilitates improvement in
Option A:	directivity
Option B:	polarization
Option C:	gain
Option D:	impedance

Q8.	The gain is always ---------- its directivity for all practical antennas.
Option A:	less than
Option B:	greater than
Option C:	equal to
Option D:	much greater than

Q9.	The directivity of half-wave dipole antenna is
Option A:	1
Option B:	1.643
Option C:	1.5
Option D:	10

Q10.	Given a linear, endfire, uniform array of 10 isotropic elements (N = 10) with a separation of $\lambda/4$(d = $\lambda/4$) between the elements, find the directivity of the array
Option A:	10
Option B:	5
Option C:	15
Option D:	20

Q11.	Which mode of radiation occurs in helical antenna due to smaller dimensions of helix as compared to an operating wavelength?
Option A:	Normal
Option B:	Axial
Option C:	Radial
Option D:	Conical

Q12.	Which of the following antenna is suitable for radio direction finding?
Option A:	Horn antenna
Option B:	Reflector antenna
Option C:	Loop antenna
Option D:	Helical antenna

Q13.	_____ antenna has lowest possible directivity.
Option A:	Helical
Option B:	Infinitesimal dipole
Option C:	Folded dipole
Option D:	Isotropic

Q14.	Which of the following is an example of light weight, low profile, planar antenna configuration?
Option A:	Small dipole
Option B:	Yagi-Uda antenna
Option C:	Infinitesimal dipole
Option D:	Microstrip antenna

Q15.	Identify the best choice out of following to design a LPF with minimum passband ripples.
Option A:	Binomial filter
Option B:	Chebyshev filter Type-I
Option C:	Chebyshev filter Type-II
Option D:	Elliptic filter

Q16.	In order to meet the requirement of sharpest cut-off in practice, which one of the following is most useful?
Option A:	Equi-ripple response
Option B:	Maximally-flat response
Option C:	Elliptic response

Option D:	Bessel response

Q17.	When the field across the mouth of the parabola is everywhere of the same phase, the beam generated is -
Option A:	omni-directional
Option B:	sharply unidirectional
Option C:	major lobe along with two sidelobes
Option D:	bifurcated in two major lobes

Q18.	A parabola reflects the wave originating from a source at the focus and transforms -
Option A:	a plane wavefront from feed at focus into spherical wavefront
Option B:	a plane wavefront from feed at focus into cylindrical wavefront
Option C:	any curved wavefront from feed at focus into a plane wavefront
Option D:	a cylindrical wavefront from feed at focus into a spherical wavefront

Q19.	Which of the following feed mechanism is NOT associated with microstrip antenna?
Option A:	Microstrip line feed
Option B:	Gregorian feed
Option C:	Coaxial feed
Option D:	Aperture-coupled feed

Q20.	In order to design a microstrip antenna, which of the following specifications are most suitable?
Option A:	Large dielectric constant and small substrate thickness
Option B:	Large dielectric constant and large substrate thickness
Option C:	Small dielectric constant and small substrate thickness
Option D:	Small dielectric constant and large substrate thickness

Q21.	For a filter, 10*log(Power Loss Ratio) defines -
Option A:	insertion loss
Option B:	return loss
Option C:	transmission loss
Option D:	reflection loss

Q22.	In practical filter design by insertion loss method, which operation is performed for conversion of normalized frequency to actual frequency?
Option A:	Richard's transformation

Option B:	Kuroda's identities
Option C:	Frequency scaling
Option D:	normalization

Q23.	As _____ decreases, antenna directivity increases.
Option A:	beam efficiency
Option B:	polarization
Option C:	beamwidth
Option D:	radiation resistance

Q24.	_____ is commonly also referred as 'Parasitic Array'.
Option A:	Log-periodic dipole array
Option B:	Yagi-Uda antenna
Option C:	Folded dipole antenna
Option D:	Helical antenna

Q25.	FNBW in terms of HPBW is ----------
Option A:	HPBW/2
Option B:	HPBW
Option C:	2HPBW
Option D:	3HPBW