

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

**University of Mumbai**  
**Online Examination 2020**

Program: TE Electronics & Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ECC603 and Course Name: Antenna & Radio Wave Propagation

Time: 1hour

Max. Marks: 50

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

Q1.	For an omnidirectional antenna first null beam width is 45 degree, the approximate directivity is
Option A:	15.2 dB
Option B:	13 dB
Option C:	7.6 dB
Option D:	6.5 dB

Q2.	$4\pi$ 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 $l = \lambda/50$ .
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?
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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.	What is the condition to avoid any grating lobe in broadside array?
Option A:	$d_{max} < \lambda/2$
Option B:	$d_{max} = \lambda$
Option C:	$d_{max} < \lambda$
Option D:	$d_{max} > \lambda$

Q16.	With increase in height, the refractive index of ionized layers
Option A:	becomes zero
Option B:	decreases
Option C:	increases
Option D:	remains unchanged

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.	This mode of electromagnetic wave propagation uses the earth's surface or curvature as a guide to transmit vertically polarized waves
Option A:	Sky wave
Option B:	Ground wave
Option C:	Transionospheric wave
Option D:	Tropospheric wave

Q22.	For a corner reflector antenna with corner angle, $\alpha = 90$ degrees, number of images will be-
Option A:	3
Option B:	4

Option C:	5
Option D:	6

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