University of Mumbai
Examination 2020 under cluster 5 (APSIT)

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: ETC504 and Course Name: RF Modelling and Antennas

Time: 1 hour   Max. Marks: 50

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

Q1.	The Schottky diodes generally used at higher frequencies for
Option A:	mixer
Option B:	mixer and detector
Option C:	detector
Option D:	switch
Q2.	In the low pass filter design
Option A:	both inductor and capacitor are connected in series
Option B:	capacitor is connected in series and inductor is connected in shunt
Option C:	inductor is connected in series and capacitor is connected in shunt
Option D:	both inductor and capacitor are connected in shunt
Q3.	The directivity of isotropic radiator is:
Option A:	0
Option B:	1
Option C:	More than 1
Option D:	infinite
Q4.	The current distribution in half wave dipole is
Option A:	sinusoidal
Option B:	constant
Option C:	triangular
Option D:	parabolic
Q5.	At high frequencies, inductors behave as-------------- resistors and --------------- capacitors besides their natural inductance.
Option A:	Series, parallel
Option B:	Series, series
Option C:	Parallel, series
Option D:	Parallel, parallel

Q6.	The radiation intensity is
Option A:	The power radiated from an antenna per unit solid angle
Option B:	The power radiated from an antenna per square meter
Option C:	The power radiated from an antenna per meter
Option D:	The power radiated from an antenna per square centimetre
Q7.	The composite filter is a
Option A:	a combination of constant-k and m-derived filter
Option B:	constant-k filter
Option C:	m-derived filter
Option D:	n-derived filter
Q8.	Antenna for direction finding is
Option A:	log periodic antenna
Option B:	dipole antenna
Option C:	horn antenna
Option D:	loop antenna
Q9.	According to the Friis formula the received power is inversely proportional to the
Option A:	Gain of transmitter antenna
Option B:	Square of the distance between transmitter and receiver
Option C:	Power of transmitter antenna
Option D:	Effective aperture of the antenna
Q10.	The modes of operation in helical antenna
Option A:	axial modes
Option B:	normal modes
Option C:	normal and axial mode
Option D:	resonant modes
Q11.	The total number of capacitors and inductors used in filter design indicates
Option A:	Ripple factor
Option B:	Shape factor
Option C:	Order of the filter
Option D:	Range of the filter
Q12.	The directivity is a measure that describes only the directional properties of the antenna and it is controlled only by
Option A:	radiation pattern
Option B:	radiation intensity
Option C:	radiation density
Option D:	radiation resistance
Q13.	Antenna is a _____ element

Option A:	Active
Option B:	Passive
Option C:	Resistive
Option D:	Capacitive
Q14.	The array of antenna is used to
Option A:	decrease directivity
Option B:	increase directivity
Option C:	increase impedance
Option D:	decrease impedance
Q15.	Gain of a half-wave dipole antenna over isotropic.
Option A:	2.15 dB
Option B:	1.76 dB
Option C:	1 dB
Option D:	0 dB
Q16.	Dipole antennas are an example for:
Option A:	Wire antennas
Option B:	Aperture antennas
Option C:	Array antennas
Option D:	Microstrip antennas
Q17.	Helical antenna provides
Option A:	Horizontal polarization
Option B:	Vertical Polarization
Option C:	Circular polarization
Option D:	Linear Polarization
Q18.	The length of an Unit element used in Kurodas identities is
Option A:	1 metre
Option B:	$\lambda/8$
Option C:	$\lambda/2$
Option D:	λ
Q19.	If the length of aperture in a pyramidal horn antenna is 10cm and δ for the design is 0.25. Then, the flaring angle of the pyramidal horn is:
Option A:	30°
Option B:	25.4°
Option C:	45°
Option D:	60°
Q20.	The members of the antenna family which are made of wires of certain value in terms of operating wavelength are called:
Option A:	Loop antennas

Option B:	Wire antennas
Option C:	Dipole antenna
Option D:	Slot antennas
Q21.	A filter which passes without attenuation all frequencies up to the cut-off frequency fc and attenuates all other frequencies greater than fc is called?
Option A:	high pass filter
Option B:	low pass filter
Option C:	band elimination filter
Option D:	band pass filter
Q22.	Linear polarization can be obtained only if the wave consists of
Option A:	Ex
Option B:	Ey
Option C:	Both Ex & Ey & in phase
Option D:	Both Ex & Ey & out of phase
Q23.	Which conversion mechanism is performed by parabolic reflector antenna?
Option A:	Spherical to Spherical
Option B:	Spherical to plane wave
Option C:	Plane to plane
Option D:	Plane to spherical wave
Q24.	It is possible to overcome the drawback of m-derived filter by connecting number of sections in addition to prototype & m-derived sections with terminating
Option A:	One-fourth sections
Option B:	Half sections
Option C:	Square of three-fourth sections
Option D:	Full sections
Q25.	An antenna has a field pattern E (θ) =cos θ. cos 2θ. The first null beam width of the antenna is:
Option A:	45^0
Option B:	90^0
Option C:	180^0
Option D:	120^0