

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E/ECE	Year / Semester : IV/ VII	Format No.	NAC/TLP-07a.13
Subject Code : EC8701	Subject Name : Antennas and Microwave Engineering	Rev. No.	02
Unit No : 2	Unit Name : Radiation Mechanisms and Design Aspects	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	An antenna source that radiates energy uniformly in all the directions is called: a) Isotropic source b) Anisotropic source c) Point source d) None of the mentioned	L2
2	Antennas that radiate energy only in a specified are called anisotropic antennas. a) True b) False	L2
3	The expression for pointing vector of an isotropic point source at a distance „r“ from the source is given by: a) $P/4 R^2$ b) P/4 c) P/4 R d) $P \times 4 R^2$	L4
4	A source has a cosine radiation-intensity pattern given by $U=U_M \cos ()$. The directivity of this source is: a) 2 b) 4 c) 6 d) 8	L5
5	A source has a cosine power pattern that is bidirectional. Given that the directivity of a unidirectional source with cosine power pattern has a directivity of 4, then the directivity of the unidirectional source is: a) 1 b) 2 c) 4 d) 8	L1
6	A source has a radiation intensity pattern given by $U=U_M \sin$. The directivity of the source with this power pattern is: a) 1 b) 1.27 c) 2.4 d) 3.4	L1
7	A source has a sine squared radiation intensity power pattern. The directivity of the given source is:	L2

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		<p>a) 1.5</p> <p>b) 3</p> <p>c) 2.5</p> <p>d) 3.5</p>	
8		<p>A source with a unidirectional cosine squared radiation intensity pattern is given by $U_M \cos^2 ()$. The directivity of the given source is:</p> <p>a) 6</p> <p>b) 8</p> <p>c) 2</p> <p>d) 7</p>	L1
9		<p>Considering distance as a parameter, two types of field zones can be defined around an antenna.</p> <p>a) True</p> <p>b) False</p>	L1
10		<p>If the field strength at receiving antenna is $1 \mu\text{V/m}$, and the effective aperture area is 0.4 m^2 and the intrinsic impedance of the medium is 377Ω, then the power received by the antenna is:</p> <p>a) 1.06 pW</p> <p>b) 1.06 fW</p> <p>c) $2 \mu\text{W}$</p> <p>d) None of the mentioned</p>	L3
11		<p>A dipole antenna is also called as?</p> <p>a) Marconi antenna</p> <p>b) Yagi antenna</p> <p>c) Bidirectional antenna</p> <p>d) Hertz antenna</p>	L2
12		<p>The impedance at the center of the antenna is known as?</p> <p>a) Characteristic impedance</p> <p>b) Radiation resistance</p> <p>c) Transmission impedance</p> <p>d) Recovery resistance</p>	L3

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13	What happens when the radiation resistance of the antenna matches the characteristic impedance of the transmission line? a) No transmission occurs b) No reception occurs c) SWR is maximum d) SWR is minimum	L1
14	The type of dipole antenna that has a higher band width is called as? a) Conical antenna b) Yagi antenna c) Helical antenna d) Marconi antenna	L1
15	The radiation pattern of a half-wave dipole has the shape of a ____ a) Doughnut b) Sphere c) Hemisphere d) Circular	L2
16	What is the beam width for a half wave dipole antenna? a) 90° b) 180° c) 50° d) 250°	L3
17	What does the beam width of an antenna tell us? a) Signal strength b) Signal power c) Directivity d) Degradation	L1
18	What does the beam width of an antenna tell us? a) Signal strength b) Signal power c) Directivity d) Degradation	L5
19	What is the power radiated by the antenna with gain called as? a) Critical power b) Transverse power c) Effective radiated power d) Transmitted power	L1

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20	What is the radiation pattern of an isotropic radiator? a) Doughnut b) Sphere c) Hemisphere d) Circular	L1
21	What is the impedance of the folded dipole antenna? a) 50 b) 100 c) 300 d) 20	L2
22	Which of the following antennas produce a vertical radiation pattern? a) Dipole antenna b) Yagi antenna c) Marconi antenna d) Hertz antenna	L1
23	What is the use of loading coil? a) Correcting resonance to a desired frequency b) Increasing the antenna gain c) Sideband suppression d) Increasing the range of the antenna	L1
24	Why is top hat added to antennas? a) To increase capacitance b) Increasing the antenna gain c) Sideband suppression d) Increasing the range of the antenna	L3
25	In a parasitic array antenna, the conductors that are not connected to the transmission line is called as? a) Driven element b) Parasitic elements c) Extra elements d) Array elements	L2
26	In a parasitic array the elements are shorted if they are connected to a conducting beam. a) True b) False	L2

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27	<p>Parasitic element that is typically about 5 percent longer than the half-wave dipole-driven element is called_____</p> <p>a) Array element b) Director element c) Reflector element d) Driven element</p>	L5
28	<p>Why is the boom of the yagi antenna connected to a metal mast and electrical ground?</p> <p>a) Better signal directivity b) Increased bandwidth c) Lightning protection a) To avoid short circuiting</p>	L2
29	<p>Which of the following is not one of the types of driven array antenna?</p> <p>a) Rectilinear antenna b) Broadside antenna c) End fire antenna a) log periodic antenna</p>	L1
30	<p>What is the length of the shortest element in the yagi antenna?</p> <p>a) One quarter the wavelength of the highest frequency b) One quarter the wavelength of the lowest frequency c) One half the wavelength of the highest frequency a) One half the wavelength of the lowest frequency</p>	L1
31	<p>Antennas having a constant pattern in the azimuthal plane are called _____</p> <p>a) High gain antenna b) Omni directional antenna c) Unidirectional antenna d) Low gain antenna</p>	
32	<p>If the power input to an antenna is 100 mW and if the radiated power is measured to be 90 mW, then the efficiency of the antenna is:</p> <p>a) 75 % b) 80 % c) 90 % d) Insufficient data</p>	