

Unit 3 - Week 1

Course outline

How does an NPTEL online course work?

Practice Assignment

Week 1

Lecture 1 : Antenna Introduction-I

Lecture 2 : Antenna Introduction-II

Lecture 3 : Antenna Introduction-III

Lecture 4 : Antenna Fundamentals-I

Lecture 5 : Antenna Fundamentals-II

Study Material

Quiz : Assignment-1

Assignment-1 Solution

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Assignment-1

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-12, 23:59 IST.

1) The measured half power beamwidths (HPBW) of an antenna in the two orthogonal planes are 30° and 20° . What will be the approximate directivity of the antenna in dBi? **2 points**

- 4.8
 9.9
 18.4
 22.4

No, the answer is incorrect.
Score: 0

Accepted Answers:
18.4

2) The axial ratio of an antenna is 1.2. If this antenna is to be used for practical applications, it is acceptable for which polarization? **2 points**

- Circular Polarization
 Linear Polarization
 Dual Polarization
 All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Circular Polarization

3) For an omni-directional antenna, HPBW in E-plane is 60° , the approximate directivity in dBi is : **2 points**

- 5.67
 4.8
 3.93
 2.81

No, the answer is incorrect.
Score: 0

Accepted Answers:
2.81

4) For a directional antenna, first null beam width (FNBW) in the E-plane is 45° , what is the HPBW of this antenna in the E-plane? **2 points**

- 55°
 45°
 20°
 30°

No, the answer is incorrect.
Score: 0

Accepted Answers:
 20°

5) If the distance from the antenna increases by 2 times, then its radiation density will: **2 points**

- Increase by 2 times
 Increase by 4 times
 Decrease by 2 times
 Decrease by 4 times

No, the answer is incorrect.
Score: 0

Accepted Answers:
Decrease by 4 times

Common Data for Questions 6 and 7: An antenna is connected to an RF source of impedance 50Ω . The power reflected from the antenna is 30% at a frequency of 2.4 GHz due to impedance mismatch, then

6) The value of voltage standing wave ratio (VSWR) is: **2 points**

- 5.2
 3.4
 2.6
 1.4

No, the answer is incorrect.
Score: 0

Accepted Answers:
3.4

7) The percentage power transmitted by the antenna is: **2 points**

- 20
 40
 60
 70

No, the answer is incorrect.
Score: 0

Accepted Answers:
70

8) A GSM 1800 cell tower antenna with 16 dBi gain is transmitting 10W of power at 1845 MHz. What is the power density at a distance of 80 m in the direction of maximum radiation? **2 points**

- 4.94 mW att/m^2

 6.4 mW att/m^2

 12.7 mW att/m^2

 14.2 mW att/m^2

No, the answer is incorrect.
Score: 0

Accepted Answers:
 4.94 mW att/m^2

9) Two identical transmitting and receiving antennas are located at a distance of 4 km. If power transmitted is 30 dBm at 15 GHz and received power is -70 dBm, the approximate gain of each antenna in dBi is : **2 points**

- 8
 14
 24
 28

No, the answer is incorrect.
Score: 0

Accepted Answers:
14

10) The diameter of a parabolic dish antenna to achieve 60 dBi gain at 11 GHz is.....: (Assume that efficiency η of the antenna is 65%.) **2 points**

- 10.7 m
 13.6 m
 5 m
 1.9 m

No, the answer is incorrect.
Score: 0

Accepted Answers:
10.7 m