

[29]

Sardar Patel University
B.Sc. (semester-V) CBCS Examination Nov.- 2018
1/11/2018, Thursday
10:00 am to 1:00 pm
Electronics & Communication
US05CELC05: Antenna and its application

Maximum Marks: 70

Note: Figure to the right indicates full marks.

- Q-1 Choose the correct Answer. [10]**
1. The intrinsic impedance of free space is symbolized by _____.
a) Z_0 b) Y_0 c) X_0 d) A_0
 2. Radiation pattern is a _____ quantity.
a) three b) two c) one d) none
 3. A _____ compares a level of signal power versus a level of noise power and is most often expressed as a measurement of decibels (dB).
a) signal-to-noise ratio b) contrast to noise ratio c) phase margin d) none
 4. Antenna aperture is same as _____.
a) area b) length c) width d) none
 5. The Radiation pattern of end-fire array is _____.
a) ohmi-directional b) bidirectional c) multidirectional d) uni-directional
 6. What is the nature of radiation pattern for an isotropic antenna?
a) hyperbolic b) spherical c) elliptical d) none
 7. The Radiation pattern of broadside array is _____.
a) uni-directional b) bidirectional c) multidirectional d) none
 8. The noise voltage for resistance R is given by _____.
a) $V=4\sqrt{KTBR}$ b) $V=\sqrt{KTBR}$ c) $V=\sqrt{2KTBR}$ d) $V=2\sqrt{TBR}$
 9. In the end-fire array , the radiation is along _____.
a) y- direction b) x- direction c) both a and b d) none
 10. The intrinsic impedance of free space is _____ Ω .
a) 720π b) 560π c) 390π d) 377π

- Q-2 Answer in short.(Any ten) [20]**
1. What do you meant by radiation pattern?
 2. What is dipole antenna?
 3. What are the types of array?
 4. Explain antenna aperture.
 5. Explain directivity and gain of antenna.
 6. Give the application of short antenna.

(P.T.O.)

- 7. Define broad side array.
- 8. Why signal to noise ratio is required?
- 9. Explain patch antenna.
- 10. Explain reflector antenna.
- 11. What are the advantages and disadvantages of binomial array?
- 12. Explain slot antenna.

Q-3 Obtain the near field due to sinusoidal current distribution. [10]

OR

Q-3 Derive the complete expression for far field due to oscillating dipole. [10]

- Q-4 (a) Explain in brief signal to noise (S/N) ratio. [05]
- (b) Explain binomial array in detail. [05]

OR

- Q-4 (a) Explain effective area of antenna in detail. [05]
- (b) Write a short note on antenna terminal impedance. [05]

Q-5 Explain general pattern of two isotropic radiators in detail. [10]

OR

- Q-5 (a) Write a note on: super directive array. [05]
- (b) Write a note on: End fire array. [05]

Q-6 Explain antenna family in detail. [10]

OR

Q-6 Draw and explain horn antenna in detail. [10]

