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B.TECH.

THEORY EXAMINATION (SEM–VI) 2016-17

ANTENNA & WAVE PROPAGATION (AWP)

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Explain the following: **10 x 2 = 20**

(a) Define radiation pattern for an antenna.

(b) What is virtual height?

(c) Define directivity and resolution for an antenna.

(d) Define beam efficiency and stray factor in antenna terminology.

(e) Define term antenna temperature.

(f) What is signal to noise ratio in antenna

(g) Draw the resultant pattern of 4 isotropic elements by pattern multiplication method.

(h) How can increase the bandwidth of patch antenna?

(i) What is space wave communication?

(j) Can normal propagation possible If frequency of incidence radio wave is equal to gyro frequency?

SECTION – B

2. Attempt any five of the following questions: **5 x 10 = 50**

(a) Derive the relation for total far field for array of two point sources with equal amplitude & phase and find out the maximum and Minimum direction for radiation pattern.

(b) Explain the terms field from oscillating dipole with suitable diagram.

(c) Explain Turstile Antenna.

(d) Why we use feed method in antenna design? Explain different type of feed method for parabolic reflector.

(e) Write the method of excitation of an antenna.

(f) Explain binomial array.

(g) Describe design principle of yagi uda antenna , characteristics, radiation pattern, with its application.

(h) Describe horn antenna?

SECTION – C

Attempt any two of the following questions: **2 x 15 = 30**

3 Explain the different type of modes of propagation.

4 **Write the short note of following :**

(i) Radiation resistance

(ii) Skip distance.

5 Define an antenna & derive the relation for total electric field having linear array of n Isotropic point sources of equal amplitude and spacing.