

**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.

