

BE - VIIth Semester Examination, 2018
Subject: Antenna & Wave Propagation
Paper: EL- 702

Time : 3 Hours

Maximum Marks -60

Note: Attempt all questions. Each question carry equal Marks.

Q.1. Explain any 3

- (i) Short dipole antenna
- (ii) Endfire array
- (iii) Yagi – Uda antenna
- (iv) Horn antenna
- (v) ground wave propagation

Q.2. Explain derive equation for power radiation from monopole antenna .

Or

Define radiation power and radiation resistance. Find out the operating frequency of a short dipole and short monopole antenna, If the radiation resistance is 0.05Ω and

- (a) Dipole length 70mm
- (b) Monopole height 120mm

Q.3. Define antenna array and point source. Describe the condition required to obtain broad side and end-five array from two element array.

Or

Obtain the expression for directivity of N-element uniform linear broad side array .

A uniform linear array is operating at 5GHz and required to produce an end-five beam, If the array consist of 20 identical elements with an inter element spacing of 0.5λ , find out the progressive phase and array length .

Q.4. (i) Explain concept of image antenna (ii) Explain the effect of earth on vertical pattern.

Or

- Explain:
- (i) Long wire antenna
 - (ii) Principle of Pattern multiplication

Q.5. Explain Babinet's principle and complimentary antenna

Or

Explain various feeders for exciting resonant antennas. Also discuss its advantages .

Q.6. What is troposphere ? Explain space wave propagation.

A transmitter antenna has a height of 200m and the receiving antenna has the height of 16m, the transmitted signal has the frequency of 1GHz then calculate the radio horizon.

Or

- (i) Explain MUF, critical frequency & skip distance.
- (ii) Derive an expression for the refractive index of ionosphere .