

Roll No.

24235

B. Tech. 5th Sem. (ECE)

Examination – December, 2016

ANTENNA, WAVE PROPAGATION & T.V. ENGG.

Paper : EE-307-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper.

No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all with Question No. 1 which is *compulsory*. All questions carry equal marks.

1. (a) Define radiation resistance and Beam width of antenna. 5
- (b) Write reciprocity theorem for antenna. 5
- (c) Write short note on multiplication of pattern. 5
- (d) What is interlaced scanning ? 5

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2. (a) Define Beam width and also discuss Band width as applied to the two major parameter of an antenna. 10
- (b) Derive reciprocity theorem for antenna. Show that transmitting and receiving radiation patterns of antenna are equal. 10
3. (a) Write short note on Antenna pattern & Antenna parameters. 10
- (b) Explain gain, directivity, aperture. 10
4. (a) Explain broadband matching. 10
- (b) Write directional properties. 10
5. (a) Express the relationship between current distribution and field pattern of an antenna. 10
- (b) Express the wave equation for radiated field from current voltage in term of electrical scalar potential. 10
6. (a) Define log periodic microwave antenna. 10
- (b) Compare the beam width of broadside and end fire array of linear uniform type having isotropic radiating elements. 10
7. Define ground wave and surface wave propagation. What is maximum distance ? What is limit of the distance ? 20
8. Draw cross sectional view of orthicon camera tube and explain how it develop video signal when light from scene is focussed on its face plate. 20
9. Write short notes on the following :
- (a) Sound transmission 10
- (b) Synchronization 10