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B.Tech. 5th Semester (F) Scheme (ECE)

Examination, December–2018

ANTEENA,WAVE PROPATION T.V. ENGG.

Paper–EE-307-F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : ***Question No. 1 is compulsory. Attempt one question*** *from each section.*

1. (a) List all the directional properties of antenna. 4

(b) What do you mean by directivity? 4

(c) Define Radiation resistance. 3

(d) What do you mean by skip distance? 4

(e) What are near zone and far zone of antenna? 5

Section-A

2. State and prove the Reciprocity theorem for antenna and also explain its applications. 20

3. (a) What do you mean by directivity? Also define different types of aperature in antenna. 10

(b) Explain different antenna parameters in detail. 10

Section-B

4. (a) Explain field and pattern of an infinitesimal dipole in detail. 15

(b) What is antenna impedance. 5

5. Explain wave equation for radiation field from current & voltage sources in terms of electric scalar potential and magnetic vector potential ? 20

Section-C

6. What is beamwidth multiplication? Also explain multi element array & their properties in detail. 20

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7. (a) Explain the operating principle of microwave antenna with diagram. 10

(b) What do you mean by tropospheric propagation. Explain. 10

Section-D

8. (a) Why is scanning necessary in TV transmission? Why it is carried out at fast rate? 10

(b) Draw and explain block diagram of TV transmitter. 10

9. (a) What is principle of image orthicon camera tube. Explain its working. 10

(b) Explain block diagram of Picture reception and sound reception. 10