Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EC-5004 (CBGS)

B.E. V Semester

Examination, December 2017

Choice Based Grading System (CBGS)

Communication Networks and Transmission Lines

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Determine the image impedance, iterative impedance and characteristic impedance of symmetrical two port network.

   b) Design an asymmetrical T-attenuator with 40dB loss to work between a source impedance of 100 Ohm and load impedance of 600 Ohm.

2. a) Discuss about the matching techniques in communication networks.

   b) Discuss Chebyshev approximation for low pass filter.

3. a) Explain the working and design of m-derived filter.

   b) Describe the transformation of a low pass filter to high pass filter using frequency transformation.

4. a) Realize the given function in foster I form:

$$z(s)=\frac{2(s^2+1)(s^2+3)}{s(s^2+2)}$$

   b) Explain Bott-Duffin method.

5. a) Derive the conditions required for a distortionless line.

   b) Write short note on T and π equivalents of a line.

6. a) Define wavelength, velocity of propagation and group velocity of transmission line.

   b) Explain the method of measurement of power and SWR of a transmission line.

7. a) What is the need of stub-matching? Explain about single and double stub-matching.

   b) Determine the input impedance of open circuit and short circuit lines.

8. Write short notes on (any two):
   a) Lattice and Bridged T networks
   b) Brune's method
   c) Design of two wire line and coaxial cable
   d) Infinite line

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