

Code No: RT31052

R13**SET - 1****III B. Tech I Semester Supplementary Examinations, May - 2016****DATA COMMUNICATION**

(Common to CSE and IT)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)2. Answering the question in **Part-A** is compulsory3. Answer any **THREE** Questions from **Part-B**

PART -A

- 1 a) Mention the applications of analog modulation and digital modulation. [4M]
- b) Briefly explain the losses that occur in optical fiber cables. [4M]
- c) Define PAM. Explain its limitations. [3M]
- d) Write about terrestrial propagation of electromagnetic waves. [3M]
- e) Describe the basic telephone call procedures. [4M]
- f) What is the remainder obtained by dividing $x^7 + x^5 + 1$ by the generator polynomial $x^3 + 1$? [4M]

PART -B

- 2 a) Discuss about TCP/IP protocol architecture. [4M]
- b) Explain about transmission impairments. How it will affect the information carrying capacity of channel? [8M]
- c) Write a short note on digital modulation. [4M]
- 3 a) List out the advantages of broadband cable over base-band cable in transmission media. [3M]
- b) Write about the characteristics of Electromagnetic Waves. [8M]
- c) Clearly explain about light sources and light detectors. [5M]
- 4 a) Describe about various digital –to-digital signal encoding techniques. [8M]
- b) What are the three major multiplexing techniques? Explain. [8M]
- 5 a) Define LOS propagation. What are the impairments specific to wireless LOS transmission? [8M]
- b) For LOS transmission, if one antenna is 100m high, then (i) find the maximum distance between two antennas, (ii) to achieve the same distance how high must be the transmitting antenna? [8M]
- 6 a) Explain in detail about subscriber loop systems. [8M]
- b) Mention the advantages of Second-Generation Cellular Telephone Systems over First- Generation Analog Cellular Telephone systems. [8M]
- 7 a) Explain CRC with an example. How does single bit error differ from a burst error? [8M]
- b) Explain about Data link layer protocols. [8M]

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