



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Computer Science and Engineering

Semester End Examination; Dec. - 2015

Data Communications

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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| 1 | a. Identify the five components of a data communication system. Explain briefly. | 8 |
| | b. Explain the following: | |
| | i) Analog and digital data | 8 |
| | ii) Analog and digital signals. | |
| | c. Assume we need to download text document at the rate of 100 pages per second. What is the required bit rate of the channel? | 4 |
| 2 | a. List layers of TCP/IP protocol suite. Explain each one briefly. | 10 |
| | b. Explain periodic analog signals. | 10 |

UNIT - II

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|---|---|----|
| 3 | a. List and explain three types of transmission impairment. | 8 |
| | b. Write a note on major categories of transmission media with suitable diagrams. | 12 |
| 4 | a. Explain transmission modes. | 5 |
| | b. List different lines coding schemes. Explain any two techniques with example. | 10 |
| | c. Explain any one digital to analog conversion techniques with example. | 5 |

UNIT - III

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|---|---|----|
| 5 | a. What is switching? Explain circuit switched network. | 8 |
| | b. Given the data word 101001111 and the divisor 10111, show the generation of CRC codeword at the sender site and receiver site using binary division. | 12 |
| 6 | a. Explain types of errors, give example. | 4 |
| | b. Compare space division and time division switches. | 6 |
| | c. Explain encoder and decoder for simple parity check code. | 10 |

UNIT - IV

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| 7 | a. Explain framing. | 5 |
| | b. Explain noiseless and noisy channels. | 5 |
| | c. Write a note on point – to – point protocol. | 10 |
| 8 | a. Explain channelization protocols. | 10 |
| | b. List and explain three controlled access methods. | 10 |

UNIT - V

- 9 a. What is IEEE 802.11? Explain different services of IEEE 802.11. 6
- b. Write MAC layer frame with neat diagram. Explain briefly. 9
- c. Explain Bluetooth layers. 5
- 10a. Write on fast Ethernet and gigabit Ethernet. 10
- b. Write a note on the following networking connecting devices :
 - i) Hubs
 - ii) Link – Layer switch
 - iii) Routers. 10
 - iv) Bridges
 - v) Transparent switches.

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