

**FACULTY OF ENGINEERING**  
**B.E. 2/4 (CSE) II – Semester (Main) Examination, June 2014**

**Subject : Data Communications**

**Time : 3 hours**

**Max. Marks : 75**

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

- |    |   |   |
|----|---|---|
| 1  | What are the characteristics of a data communication system.                              | 2 |
| 2  | For the bit stream 110000 1000000001 sketch the waveform for HDB3 scrambling technique.   | 2 |
| 3  | What is bit stuffing?   | 2 |
| 4  | What are the causes of transmission impairment.   | 3 |
| 5  | What are the characteristics of STAR topology? What are its advantages and disadvantages. | 3 |
| 6  | Differentiate between datagram switching and virtual circuit switching.                   | 3 |
| 7  | What is CSMA / CD?  | 2 |
| 8  | What is Hidden station problem?   | 2 |
| 9  | What are the characteristics of third generation system of cellular wireless network?     | 3 |
| 10 | What are the services provided by IEEE 802.11 wireless LAN? Explain.                      | 3 |

**PART – B (50 Marks)**

- |    |   |    |
|----|---|----|
| 11 | Explain about the functionalists of different layers in TCP / IP model. Enumerate the protocols used in each layer. | 10 |
| 12 | a) What is digital to digital encoding? Explain any 3 digital to digital encoding techniques.                       | 5  |
|    | b) Explain any 2 techniques for error detection.  | 5  |
| 13 | a) Explain the flow control protocols in Data Link layer.   | 5  |
|    | b) Discuss the architecture of frame relay protocol.  | 5  |
| 14 | a) Define multiplexing. What is the need for multiplexing.  | 5  |
|    | b) What are the different multiplexing techniques? Explain.   | 5  |
| 15 | a) Explain the frame formats of IEEE 802.3 Ethernet LAN.  | 5  |
|    | b) Differentiate between bridges and switches.  | 5  |
| 16 | a) How medium access control done in wireless LAN?  | 4  |
|    | b) Explain the architecture of Bluetooth.   | 6  |
| 17 | Write short notes on the following :  | 10 |
|    | a) HDLC                      b) xDSL                      c) ATM Adaptation layer                                   |    |

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