Code No: **RT42102**   **R13**   Set No. 1

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018
DATA COMMUNICATIONS
(Electronics and Instrumentation Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B
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PART–A *(22 Marks)*

1. a) Compare the BER performance of QAM and QPSK.   [4]
    b) Define transmission mode and its types.   [4]
    c) What are the key advantages and disadvantages of LANs?   [3]
    d) How Manchester encoding helps in achieving better synchronization?   [4]
    e) What is the class of the following addresses?
       (i) 246.7.3.8
       (ii) 227.34.78.7   [4]
    f) What does the term Multimedia stands for? Explain.   [3]

PART–B *(3x16 = 48 Marks)*

2. a) Distinguish carrier recovery and clock recovery with examples.   [8]
    b) Discuss about QPSK, 8PSK and 16PSK.   [8]

3. a) What is the significance of Topologies? Explain different topologies.   [8]
    b) List the three techniques in serial transmission and explain the transmission in detail.   [8]

4. a) Explain 3 fast Ethernet implementations.   [8]
    b) Explain the operation of FDDI Protocol and what the difference with 802.5 token ring protocols is.   [8]

5. a) We have ten sources, each creating 200 characters per second. If the interleaved unit is a character and 1 synchronizing bit is added to each frame. Find
       (i)   the data rate of each source
       (ii) the duration of each character in each source
       (iii) the frame rate
       (iv) the duration of each frame   [8]
    b) Compare different multiplexing techniques.   [8]

6. a) Giving the Protocol Stack Diagram, write about IEEE 802.11 WLAN Standard emphasizing the MAC sub-layer.   [8]
    b) Compare 802.11 and blue tooth standard.   [8]

7. a) What is the need for compression in Audio and Video?   [8]
    b) Explain Real Time Protocol and Real Time Control Protocol.   [8]