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Roll No.

Subject Code—2059

M.C.S. EXAMINATION

(Fourth Semester)

MC-16

COMPUTER NETWORKS

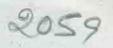
Time: 3 Hours Maximum Marks: 100

Note: Attempt any Five questions. All questions carry equal marks.

- Sketch the model of a data communication system and describe the function of each component involved in data communication.
- 2. Distinguish between the following using diagrams:
 - (a) Half duplex and Full duplex transmission
 - (b) Bit rate and Baud rate
 - (c) Manchester and Differential Manchester Encoding.



- 3. (a) What is the theoretical maximum bit rate for a noiseless channel according to Nyquist? What is it for a noisy channel according to Shannon? Calculate the capacity of a noiseless channel if the channel bandwidth is 3000 Hz and transmitting a signal with 4 signal levels.
 - (b) How does multiplexing affect data communication? Discuss the types of multiplexing used in data communication.
- 4. What is Digital Transmission? Why is digital to analog conversion required? Explain the techniques/encoding for digital to analog conversion.
- Sketch the layers of OSI reference model and list the functions of each layer.
- 6. (a) Sketch a suitable topology for a Local
 Area Network and describe how clientserver architecture fits in the topology.
 - (b) What are the advantages of packet switching over circuit switching in data communication?



- 7. Describe the purpose of the following:
 - (a) Token in IEEE 802.4 Token bus
 - (b) Monitor station in IEEE 802.5 Token Ring
 - (c) Pad field in the frame format of IEEE 802.3 Ethernet.
- 8. (a) How are reservations made for transmission in DQDB MAN standard?
 - (b) Is HDLC a bit oriented or byte oriented protocol? Describe the common transfer modes provided by HDLC.