Reg No.										

प्रज्ञानं ब्रह्म

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MANIPAL INSTITUTE OF TECHNOLOGY

(Constituent Institute of Manipal University)

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FIFTH SEMESTER B.E. DEGREE END SEMESTER . EXAMINATION – DEC 2009

SUBJECT: COMPUTER COMMUNICATION AND NETWORKING (CSE 309)

24th November 2009

TIME : 3 HOURS **MAX.MARKS : 50**

Instruction to Candidates

- Answer **any five** full questions
- Missing data can be suitably assumed

1.(A) Compare and contrast the TCP/IP and OSI Reference model. (5 marks)

1.(B) What devices are used as source and detector in case of single mode of fiber? (2marks)

1.(C) Explain the various categories of un-shielded twisted pair cable(UTP) . How UTP is from shielded twisted pair cable STP. (3 marks)

2.(A) Sketch the Manchester as well as differential Manchester encoding for the data stream: 0001110101 (2 marks)

2.(B) Given a channel with an intended capacity of 20 Mbps. The bandwidth of the channel is 3 MHz. What signal-to-noise ratio is required in order to achieve this capacity? (3 marks)

2. (C) Given the data Stream 1011000111. Draw the In-phase and the Quardrature phase (in details) (5 marks)

3.(A) For P=110011 and M=11100011, find the CRC using digital logic at the transmitter and check whether there will be an error or not? (7 marks)

3.(B) Explain different types of Errors in digital transmission system ? (3 marks)

4.(A) Derive the line utilization expression for sliding window flow control. (5 marks)

4.(B) How is the wastage of bandwidth in TDM overcome by Statistical Time Division Multilpexing? (3 mraks)

4.(C) How is interference avoided by using frequency division Multiplexing? (2 marks)

5.(A) Write Short note on

(i) Switched LAN

(ii) Fast Ethernet

(iii) Exposed station problem (6 marks)

5.(B) A group of N stations share a 56-kbps pure ALOHA channel. Each station outputs a 1000-bit frame on an average of once every 100 sec , even if the previous one has not been sent (e.g., the stations can buffer outgoing frames). What is the maximum value of N? (4 marks)

6.(A) Distinguish between datagram and virtual circuit subnets. (2 marks)

6.(B) An IP packet to be transmitted by Ethernet is 60 bytes long, including all its headers. If LLC is not in use, is padding needed in the Ethernet frame, and if so, how many bytes? (4 marks)

6.(C) Compare the Bit-map Protocol and Binary Count Down protocol. (4 marks)

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