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Et-602/DC&N/6th Sem/2017/N

DATA COMMUNICATION AND NETWORKING

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

PART – A

Marks – 25

Multiple choice questions :

1. In simplex transmission 1
 - (a) Data format is simple
 - (b) Data transfers in one direction
 - (c) Data transmitted in one direction only
 - (d) None of the above

2. Connectionless transfer 1
 - (a) requires a logical connection
 - (b) requires a physical connection
 - (c) transfers data without any connection
 - (d) is same as connection oriented transfer

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3. Network layer 1
- (a) forwards packets
 - (b) manages networks
 - (c) networks computers with each other
 - (d) lists out all networks
4. An important difference between a hub and a switch is that a switch 1
- (a) is not broadcasting
 - (b) is slower
 - (c) cannot connect networks
 - (d) is more complicated
5. Which layer of OSI model does framing ? 1
- (a) Network
 - (b) Presentation
 - (c) Data link
 - (d) Physical
6. Fill in the blanks with suitable words ? 1×5=5
- (i) Modems are the device, which are the combination of _____ and _____.

(ii) The capacity of ISDN D channel is _____ kbps.

(iii) ATM stands for _____.

(iv) The wireless LAN is standardized by IEEE _____.

7. State true or false : 1×5=5

(i) Baud is the rate of transfer of information bits.

(ii) Twisted pair is affected by electromagnetic interference.

(iii) The trailer of a packet contains the destination address.

(iv) HTTP works at the application layer.

(v) LANS can be arranged in star, bus or ring configurations.

8. What are the two broad classifications under which networks can be divided ? 1

9. Define bit rate. 1

10. Name a network operating software (NOS). 1

11. What is the connector used in UTP cable ? 1
12. Define network topology. 1
13. What does TCP/IP stands for ? 1
14. Name a modem standard. 1
15. Define asynchronous communication. 1
16. Name one media used for data communication. 1
17. Define a router used in data communication. 1

PART – B

Marks – 45

1. Classify and briefly describe the types of computer networks. 3
2. Define connection oriented and connectionless communication. 3
3. Classify the different types of IP addresses. 3
4. Explain how CSMA/CD protocol works for media access. 4

5. Explain the 802.5 or Token Ring frame format. 4
6. Explain the services provided by ISDN. 4
7. What are the different hardware and the software required to set up a Local Area Network? 4
8. Explain the functions performed by any three layers of an ISO/OSI model. $2 \times 3 = 6$
9. Briefly explain the 8251 USART. 4
10. Describe the RS-232 standard. 3
11. Explain the role of a modem in a communication system. 3
12. Draw the frame format for the 802.3 and 802.4 LAN. 4