

2010

Time : 3 hours

Full Marks : 80

*Candidates are required to give their answers in
their own words as far as practicable.*

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A

(Objective Type Questions)

1. Choose the correct answer of the following :

2×10 = 20

(a) ARP is used to find :

- (i) IP Address
- (ii) MAC Address
- (iii) Subnet Address
- (iv) Host Address

(b) Baud is :

- (i) Number of bits per second
- (ii) Number of signal changes per second
- (iii) Number of bytes per second
- (iv) Number of characters per second

(c) Router operates in :

- (i) Data Link Layer
- (ii) Network Layer
- (iii) Transport Layer
- (iv) All of the above

(d) Flow control in OSI model is done by :

- (i) Data link layer
- (ii) Network layer
- (iii) Transport layer
- (iv) Both data link and transport layer

(e) IP address in the B class is ?

- (i) 125.123.123.2

- (ii) 191.023.21.54
 - (iii) 192.128.32.56
 - (iv) 10.14.12.34
- (f) Which of the following to keep track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet ?
- (i) Address Resolution Protocol (ARP)
 - (ii) Internet Protocol (IP)
 - (iii) Hyper Text Transfer Protocol (HTTP)
 - (iv) Transmission Control Protocol / Internet Protocol (TCP/IP)
- (g) The device operating at Data Link Layer is :
- (i) Bridge
 - (ii) Router
 - (iii) Repeater
 - (iv) None of the above

- (h) Not a function of a Data Link Protocol :
- (i) Media Access Control
 - (ii) Amplitude Shift Keying
 - (iii) Message Delineation
 - (iv) Error Control
- (i) TELNET, FTP, SMTP. Protocols fall in the following layer of OSI reference model :
- (i) Transport Layer
 - (ii) Internet Layer
 - (iii) Network Layer
 - (iv) Application layer
- (j) Which of the following technology is based on virtual circuits ?
- (i) Frame relay
 - (ii) Token bus
 - (iii) Token ring
 - (iv) Ethernet

Group – B

(Long-answer Type Questions)

Answer any **four** questions :

2. (a) Explain with the help of a neat labelled diagram the ISO-OSI Model and the function of its various layers. 8
- (b) What are the different classes of addresses used in IPv4 ? List their ranges in dotted decimal notation. 7
3. (a) Compare the IEEE standards 802.2, 802.3, 802.4, 802.5, and 802.6 briefly. 8
- (b) Briefly explain the High-Level Data Link Control (HDLC) protocols with neat labelled diagrams. 7
4. (a) With respect to transmission media, compare Fiber Optics and Copper Wire. 8
- (b) Explain the concept of framing with respect to Data Link Layer. 7
5. (a) Explain the concept of IP protocols and addresses, subnets and Internet Control Protocols for the network layer in the Internet. 8

- (b) What are Routing Algorithms ? Explain flooding, the optimality principle and shortest path routing. 7
6. (a) What is meant by simplex, half duplex and full duplex communication system ? Give representative examples of each. 8
- (b) What is circuit switching ? Discuss how packet switching is better than circuit switching for computer to computer communication. 7
7. (a) Describe the advantages of a small cell size in ATM. 8
- (b) What is distributed routing ? Compare it with hierarchical routing. 7
8. (a) What are the reasons for congestion in a network ? Describe any one method for congestion control. 8
- (b) Compare and contrast between OSI model and TCP/IP model. 7

9. (a) What is Sliding Window Protocol ? Explain with well labelled diagram. 8
- (b) What is the difference between Hub and Switch ? 7
10. (a) What is the use of VPN ? 8
- (b) Compare static and dynamic routing. What are the various dynamic routing protocols ? 7

