

**2014**

*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)**

**Answer all questions.**

**1. Choose the correct answer of the following :**

**2×10 = 20**

**(a) Router operates in :**

**(i) Data link layer**

**(ii) Network layer**

**(iii) Transport layer**

**(iv) None of these**

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(b) The network area within which data packets originates and collides is called as :

- (i) Collision Detection
- (ii) Collision Domain
- (iii) Common Domain
- (iv) None of these

(c) Not a function of Data Link Protocol :

- (i) Media Access Control
- (ii) Amplitude Shift Keying
- (iii) Message Delineation
- (iv) Error Control

(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) ARP is used to find :

- (i) IP Address
- (ii) MAC Address
- (iii) SubnetAddress
- (iv) HostAddress

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Contd.

(f) Baud Rate is :

- (i) Number of bits per second
- (ii) Number of nibbles per second
- (iii) Number of bytes per second
- (iv) Number of symbols per second

(g) IP address in C class is :

- (i) 125.124.124.2
- (ii) 191.023.21.255
- (iii) 10.2.2.2
- (iv) 192.168.1.1

(h) Well known port ranges from :

- (i) 0 to 1023
- (ii) 1024 to 2046
- (iii) 0 to 3200
- (iv) All of these

(i) UDP stands for :

- (i) Unreliable Datagram Protocol
- (ii) User Datagram Protocol
- (iii) User Determined Protocol
- (iv) None of these

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(i) ICMP belongs to which layer ?

- (i) Physical layer
- (ii) Network layer
- (iii) Data link layer
- (iv) Application layer

**Group – B**

**(Long-answer Type Questions)**

Answer any four questions of the following :

15x4 = 60

2. How is hub different from switch ? Discuss guided and un-guided mode of data transmission in brief. What is CSMA/CD ? How is it different from CSMA ?
3. Discuss, in detail, shortest path and flow based routing.
4. What is the use of VPN ? Compare static and dynamic routing. What are the various dynamic routing protocols ?
5. Discuss TCP and UDP transport layer protocol in detail.

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6. Explain the working of Pure and Slotted Aloha.

Derive an expression to prove the claim that slotted aloha is better than Pure Aloha.

7. Explain, with help of a neat diagram, the ISO-OSI Model and the function of its various layers. What are the different classes of addresses used in IPv4 ? List their ranges in dotted decimal notation.

8. Discuss Distance Vector and Link State Routing in detail.

9. What is framing and why is it required ? Explain the framing concept with respect to data link layer.

10. What is meant by simplex, half duplex and full duplex communication system ? Give representative example of each. What is circuit switching ? Discuss how packet switching is better than circuit switching for computer to computer communication.



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