

22520

23124

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

10

- (a) Differentiate between IPv4 and IPv6 on the basis of length and security.
- (b) State the need of IPv6.
- (c) Elaborate need of domain name system.
- (d) List any 2 features of TCP.
- (e) List all 4 routing algorithms.
- (f) Enlist any two services offered by UDP.
- (g) State any three phases of mobile IP.

2. Attempt any THREE of the following :

12

- (a) Describe packet format of IPv6.
- (b) Explain Bellman Ford algorithm with suitable example.



- (c) Explain working of world wide web.
- (d) If an address in a block given in CIDR classless notation as 64.32.16.8/27 then find the following :
 - (i) Number of addresses given in block (N)
 - (ii) The first address
 - (iii) The last address
 - (iv) Find Prefix bit (n)

3. Attempt any THREE of the following :

12

- (a) Differentiate between distance vector routing and link state routing.
- (b) From below list, explain any two different transition method from IPv4 to IPv6.
 - (i) Dual stack
 - (ii) Tunneling
 - (iii) Header translation
- (c) Explain the working of TELNET.
- (d) The dump of UDP header in hexadecimal format is as follows :

BC82D00D002B001D

obtain the following :

- (i) Source port number
- (ii) Destination port number
- (iii) Total length
- (iv) Packet direction

4. Attempt any THREE of the following :**12**

- (a) Construct a suitable diagram for each below commands of FTP to show its use
 - (i) get
 - (ii) mget
 - (iii) put
 - (iv) mput
- (b) Describe RIP message format in detail.
- (c) Describe the header fields in message format of e-mail system.
- (d) Compare TCP with UDP on any four points.
- (e) Compare POP3 with IMAP on below points
 - (i) TCP port used
 - (ii) E-mail stored at
 - (iii) Time required to connect
 - (iv) Multiple mail boxes

5. Attempt any TWO of the following :**12**

- (a) Explain how TCP connections are established using 3 way handshake.
- (b) Demonstrate with suitable example of collision in TCP connection.
- (c) Explain following address types of IPv6 :
 - (i) Unicast address
 - (ii) Multicast address
 - (iii) Anycast address

6. Attempt any TWO of the following :**12**

- (a) Explain distance vector routing and open shortest path first routing protocol in detail.
 - (b) For the IP addresses given below :
 - (1) Identify the classes to which the IP address belongs to
 - (2) Identify network address section
 - (3) Identify host address section
 - (4) Calculate number of hosts that can be assigned with each network
 - (i) 122.34.45.133
 - (ii) 12.12.12.12
 - (iii) 192.10.233.26
 - (c) Describe DHCP operations, when DHCP client and server on same network.
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