

22520

12425

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Preferably, write the answers in sequential order.

Marks

1. Attempt any FIVE of the following :

10

- (a) State any two advantages of IPv6 Protocol over IPv4 Protocol.
- (b) Enlist any four extension headers of IPv6.
- (c) Compare SMTP and HTTP w.r.t. (i) use of port number (ii) used for type of service.
- (d) Enlist any two services provided by UDP.
- (e) Draw a neat labelled sketch of TCP Header format.
- (f) State the use of following FTP commands :
 - (i) M get
 - (ii) Site
- (g) State any two limitations of IPv4 Protocol.



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

- (a) Compare TCP and UDP w.r.t (i) Connection setup (ii) Retransmission of data (iii) Reliability & acknowledgement (iv) Flow control & error control
- (b) Draw a neat labelled sketch of IPv4 Header format. Also explain
 - (i) Service type
 - (ii) Identification
 - (iii) Flag
 - (iv) Header checksum fields of it
- (c) Explain in brief the components of DHCP.
- (d) A block of IP address is granted to a small organization. From this block of address one address is 205.16.37.39/28.

Find

- (i) First address of the block
- (ii) Last address of the block
- (iii) Subnet Mask
- (iv) No. of Hosts

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

- (a) Describe Routing Information Protocol (RIP).
- (b) Explain in brief following IPv4 to IPv6 transition techniques :
 - (i) Dual stack
 - (ii) Header Translation
- (c) Compare FTP and TFTP w.r.t.
 - (i) Authentication
 - (ii) Protocol used
 - (iii) Ports
 - (iv) Data Transfer
- (d) Explain connection establishment process of TCP.

4. Attempt any THREE of the following : 12

- (a) Explain the process of resolving the host name `www.msbte.org` into IP address using DNS.
- (b) Enlist any four features of OSPF. Explain any two OSPF features in brief.
- (c) Explain the working of TELNET.
- (d) Describe the flow control in TCP.
- (e) Explain the operations of POP3.

5. Attempt any TWO of the following : 12

- (a) Explain following services provided by TCP with neat labelled sketch of each service :
 - (i) Stream delivery service
 - (ii) Sending and receiving buffer
 - (iii) Bytes and segments
- (b) How flow control, congestion control and error control is handled by SCTP ?
- (c) Draw a neat labelled sketch of IPv6 header format and explain all the fields of IPv6 header.

6. Attempt any TWO of the following : 12

- (a) Compare distance vector routing and link state routing w.r.t.
 - (i) Concept
 - (ii) Information sharing
 - (iii) Algorithm used
 - (iv) Convergence
 - (v) Problem in Protocol
 - (vi) Example Protocol

- (b) For the following IP address given below :
- (i) 208.34.54.12
 - (ii) 238.34.2.1
 - (iii) 114.34.2.8
 - (iv) 129.14.6.8
- (1) Identify the classes of IP address.
 - (2) Identify Network address section of each.
 - (3) Identify Host address section of each.
 - (4) Calculate number of Hosts that can be assigned with each network.
- (c) Explain three main components of E-mail system.
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