

T.Y. B.Sc. (IT) : Sem. VI  
**Internet Technologies**



Time : 2½ Hrs.]

Prelim Question Paper

[Marks : 75

- Instruction :** (1) All questions are compulsory.  
(2) Make suitable assumptions wherever necessary and state the assumptions made.  
(3) Answers to the same questions must be written together.  
(4) Numbers to the right indicate marks.  
(5) Draw neat labeled diagrams wherever necessary.

1. Attempt any **TWO** question of the following : [10]  
(a) Change the following IP address from dated decimal notation to hexadecimal notation :  
(i) 114.34.2.8           (ii) 129.14.6.8           (iii) 208.34.54.12  
(iv) 238.34.2.1           (v) 192.177.23.15  
(b) Compare IPv6 and IPv4 protocols.  
(c) Explain Dual stack and tunneling in IPv6.  
(d) Describe an IPV4 datagram header format.
2. Attempt any **TWO** question of the following : [10]  
(a) Explain the Distance Vector algorithm used in Routing Information Protocol.  
(b) Explain the phases for Mobile IP communication.  
(c) Describe the problem of counting infinity or instability in RIP distance vector routing.  
(d) Explain the cache control module and the cache table in the ARP package.
3. Attempt any **TWO** question of the following : [10]  
(a) Explain the TCP timers.  
(b) Explain the server state transition diagram for TCP.  
(c) State and explain the UDP services.  
(d) A TCP connection is to the ESTABLISHED State. The following events occur one after another.  
(i) A FIN segment is received  
(ii) The application sends a "close" message  
What is the state of the connection after each event?  
What is the action after each event?
4. Attempt any **TWO** question of the following : [10]  
(a) Explain the services provided by Stream Control Transmission Protocol.  
(b) Explain the DHCP client transition diagram.  
(c) Explain SCTP association establishment and Termination.  
(d) Explain in detail recursive and iterative resolution in DNS.
5. Attempt any **TWO** question of the following : [10]  
(a) State and explain the different TFTP messages.  
(b) Describe NVT character set for option negotiation.  
(c) Explain the architecture of WWW.  
(d) What are the types of modes in TELNET? Explain.
6. Attempt any **TWO** question of the following : [10]  
(a) Explain image compression.  
(b) Describe the leaky bucket technique of traffic shaping  
(c) What are the three phases for a mail transfer in Simple Mail Transfer Protocol?  
(d) Explain the following email scenarios with the help of diagrams:  
(i) When the sender and the receiver of an e-mail are on different mail servers.  
(ii) When sender is connected to the mail server via a LAN or a WAN,

7. Attempt any **THREE** question of the following :

[15]

- (a) Differentiate between OSI and TCP/IP.
- (b) List various BGP message. Write the purpose of each.
- (c) Compare TCP with UDP
- (d) Differentiate between a TCP header and a SCTP header.
- (e) Explain Persistence and non-persistence connection of HTTP.
- (f) Discuss the flow characteristics when dealing with multimedia.

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**Paper Discussion Schedule for TY B.Sc. (IT) Sem. VI**

<b>Date</b>	<b>Day</b>	<b>Timing</b>	<b>Centre</b>
28 April 2018	Saturday	10.00 a.m. to 12.00 p.m.	Borivali
28 April 2018	Saturday	1.00 p.m. to 3.00 p.m.	Andheri
29 April 2018	Sunday	1.00 p.m. to 3.00 p.m.	Dadar
29 April 2018	Sunday	4.00 p.m. to 6.00 p.m.	Nerul
30 April 2018	Monday	9.00 a.m. to 11.00 a.m.	Ghatkopar
30 April 2018	Monday	12.00 p.m. to 2.00 p.m.	Thane
30 April 2018	Monday	3.00 p.m. to 5.00 p.m.	Dombivli