B4.5-R3: INTERNET TECHNOLOGIES AND TOOLS

NOTE:

> 1. **Answer question 1 and any FOUR questions from 2 to 7.**
> 2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.
a) Differentiate between stream cipher and block cipher?
b) What is loopback interface? Explain.
c) How is a pathname and an URL recognised? Discuss at least one way in which pathnames and URLs are similar.
d) How can IPv4 address be converted to an equivalent IPv6 address?
e) Which of the following transport technique is most appropriate for multimedia service? Explain in brief:
   i)   packet switching
   ii)   circuit switching
   iii)   ATM cell switching
f) What is the purpose of IGMP? What is the range of available IP multicast addresses?
g) Explain, what do you understand by CGIP script?

(7x4)

2.
a) Explain, how a session layer establishes, maintains and synchronises the interaction between two communicating hosts.
b) What is the purpose of the unpaired img tag in an HTML document? Explain with the help of an example.
c) What is meant by upstream and downstream?

(6+6+6)

3.
a) Why is IP called a best-effort delivery protocol?
b) What is the difference between monoalphabetic substitution cipher and polyalphabetic substitution cipher?
c) Discuss, how the files can be copied across the network with FTP. What is the primary difference between FTP and HTTP?

(6+6+6)

4.
a) What is the difference between an Ethernet switch and an Ethernet hub? Which is more suitable for a network with a high traffic load, a switch or a hub? Explain.
b) Compare DSL with the following:
   *   56 Kbps analog modems
   *   T.1 line
   *   ISDN
c) When a DNS server receives a request, what are the possible actions that it can take?

(6+6+6)

5.
a) Describe the steps involved when a Web browser requests for and obtains a Web page from a Web server.
b) What exactly do you mean by markup? Explain using a simple example.
c) Differentiate between 10 Base5, 10 Base2, 10 Base2, 10 BaseT and 10 BaseF.

6.
a)   What is connection-oriented service? Why is it considered reliable?
b)   What are the various layers in the TCP/IP model? Discuss the responsibility of each layer. Also name some protocols supported at each layer.
c)   What do you understand by network topology? Discuss any three network topologies.

(3+9+6)

7.
a)   What is Virtual circuit network? What are its advantages and disadvantages? Name some network technologies that use virtual circuits.
b)   Differentiate between ARP and RARP.
c)   Differentiate between distance vector routing and link state routing protocols.

(6+6+6)