Course Code : CST 403 - 1 ITSJ/RW – 17 / 1100

Seventh Semester B. E. (Computer Science and Engineering) Examination

Elective – I

WEB ARCHITECTURE AND TECHNOLOGY

Time : 3 Hours] [Max. Marks : 60

Instructions to Candidates :—
  (1) All questions carry equal marks. Figures to the right indicate marks.
  (2) Carefully see the internal choices.
  (3) Which Course Objective (COs) are satisfied by the question is mentioned against each question.
  (4) Assume suitable data and illustrate your answers with the help of neat sketches wherever necessary. Due credit will be given to neatness.

1. (a) What is the contribution of Ethernet in Internet evolution ? Also discuss Ethernet in brief. 5 (CO 1)

   (b) For an IP address 198·170·50·100 and subnet mask 255·255·255·192, what are the subnet addresses? How many hosts per subnet are possible ? If we want to create subnets of 100, 50, 50 hosts each, is it possible ? How ? 5 (CO 1)

OR

2. (a) Suppose you have a wide area network with 1350 hosts on three networks (in different cities) that are connected by a TCP/IP router. You may require one Class B address. Is it good for an ISP to provide one Class B address ? If yes how and if not why ? Give your solution to this problem. 5 (CO 1)

   (b) What is AS ? Can governments control traffic passing through their territories using inter AS routing ? Explain in view of BGP. 5 (CO 1)

3. (a) What are the differences between concurrent and iterative servers ? Explain any one process model to implement concurrent servers. 5 (CO 1)

(b) An IP packet with 3000 bytes of data is passed through a network with MTU = 600. What is the solution if the packet need be forwarded through the same network ? Illustrate the complete process.   5 (CO 1)

OR

4. (a) What is the most commonly used scenario in E-mail systems ? Explain various agents and the protocols used to implement them.   5 (CO 1)

(b) What are provisions in IPv6 if it has to communicate with hosts implementing IPv4 ? Consider various scenario.   5 (CO 1)

5. Solve any **Two** :—

(a) What are static, dynamic and active web pages ? Why do we require CGI scripts ?   5 (CO 2)

(b) What are GET and POST methods ? Explain all environment variables which are used in CGI scripts.   5 (CO 2)

(c) Regular expressions are the specialty of Perl. Justify. Write Perl code segment to search for the presence of a vowel (and a consonant) in a given string.   5 (CO 2)

6. (a) Explain IPSec protocol. What is the difference between tunnel mode and transport mode in IPSec ?   5 (CO 2)

OR

(b) What are cookies ? Why do we use them ? Give an example of a Java script which checks the current date of the document and verifies it with cookie stored. If they are not same, system alerts the user.   5 (CO 2)

(c) What is e-commerce ? Why is it popular ? What can be future of e-commerce in your opinion ?   5 (CO 3)

7. (a) What factors do affect the design of firewalls ? How do Bastion host increase the security ?   5 (CO 3)

(b) How internet telephony is different than public telephone networks ? Discuss issues in internet telephony. 5 (CO 3)

OR

(c) Explain how multimedia streaming is implemented in Internet. 5 (CO 3)

8. (a) Define web and application server. How are they different ?
5 (CO 3)

(b) Does multitier architecture simplify design and increase efficiency of web servers ? How ? 5 (CO 3)

OR

(c) What is a framework ? Describe advantages of using a framework.
5 (CO 3)