Course Code : CST 403-1/CST 413-1   CXDW/RW – 18 / 5104

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

Elective - I

WEB ARCHITECTURE AND TECHNOLOGIES

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)   Assume suitable data and illustrate your answer with the help of neat sketches wherever necessary.
   (4)   Due credit will be given to neatness.

1.   (a)   Explain Archie and Gopher as a milestone in Evolution of Internet.

                                                                3   (CO   1)

OR

     (b)   How RFCs have contributed in the development of Internet ? Justify.

                                                                3   (CO   1)

     (c)   A packet is decomposed into 3 fragments, each with a header IP length of 20 bytes. The length of last fragment is 300 bytes and its Fragmentation Offset is 150.

         (1)   What is the network MTU ?

         (2)   What is the data payload of the last fragment ?

         (3)   What is the combined data payload of the fragments excluding last fragment ?

         (4)   What are the Fragmentation Offset's of the fragments ?

         (5)   What is the length and data payload of the original packet ?

         (6)   A second packet must be sent as a group of three fragments. Calculate its minimum and maximum allowed size.

                                                            7 (5 + 2) (CO 1)

2. (a) Encode the following messages in base64 and in quoted printable :

01010111 00001111 11110000 10101111 01110001 01010100

01010111 00001111 11110000 10101111 01110001 01010100

Compare the result in terms of overhead in bytes. 6 (CO 2)

(b) Describe Recursive name resolution with neat sketch. Which command is used to invoke DNS name resolver ? Show the execution of that command. 4 (CO 2)

OR

(c) Which type of port numbers are used while FTP communication ? Why does FTP use more than one port numbers for communication ? 4 (CO 2)

3. Solve any **Two** :—

(a) What make different to Associative array and Dynamic array in Perl ? Explain with the example. 5 (CO 2)

(b) Why Client side image maps are beneficial as compared to server side maps ? 5 (CO 2)

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

4. (a) Use Mono - alphabetic Cipher to encrypt the message "RCOEM NAGPUR". Find cipher text and show the encryption as well as decryption.

Key-ZAQWSXCDERFVBGTYHNMJUIKLOP

(Note: Ignore the space between words) 5 (CO 3)

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

OR

(c) Compare RSA and DES the two cryptographic algorithm on the basis of given parameters

(1) Execution time and

(2) More Secure. Give justification for your answer.   5 (CO 3)

5. Solve any **Two** :—

   (a)   Differentiate between Single - homed host and Dual - homed host. In the dual - homed host firewall, how many security points must be broken by an intruder before he can get into the internal network ?   5 (CO 3)

   (b)   Explain IPSec protocol. What is the difference between tunnel mode and transport mode in IPSec ?   5 (CO 3)

   (c)   Write short note on Session Initiation Protocol (SIP).   5 (CO 3)

6.   (a)   What is a web server ? What are the typical functionalities of a web server ?   5 (CO 3)

   (b)   Explain MVC in detail. Why MVC is most popular architectures in web application domain ?   5 (CO 3)