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**B.E./B.Tech. (Full-Time) DEGREE END SEMESTER EXAMINATIONS (April 2014)
ELECTRICAL AND ELECTRONICS ENGINEERING BRANCH**

Sixth Semester

EE 9354 - Data Communication and Computer Networks [R 2008]

Time: 3 Hrs.

Max. Marks: 100

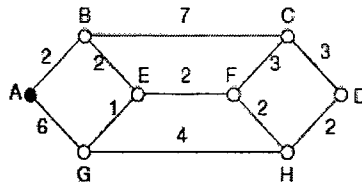
Answer ALL Questions

Part - A [10 x 2 = 20]

1. Expand and Explain: TTL.
2. What is the maximum overhead in byte-stuffing algorithm?
3. List the two sub-layers of Data Link Layer and its purpose.
4. Compare Virtual-circuit and Datagram networks based on routing.
5. List the port numbers used for *ftp*, *http*, *https* and *smtp*.
6. Differentiate between UDP and TCP.
7. What do you mean by cybersquatting?
8. Briefly explain the concept of base64 encoding.
9. List and briefly explain the historical categories of encryption methods.
10. Define Cryptanalysis and Cryptography.

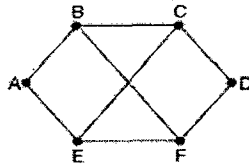
Part - B [5 x 16 = 80]

11. Explain the connection establishment and connection release in TCP protocol and its connection management modelling using finite state machine. [16]
12. a) i) A bit stream 10011101 is transmitted using the standard CRC method. The generator polynomial is $x^3 + 1$. Show the actual bit string transmitted. Suppose the third bit from the left is inverted during transmission. Show how this error is detected after receiving. [14]
ii) Summarize the operations of CRC algorithms. [2]
Or
b) i) Write a detailed note on OSI model with the functionalities of each layer. [12]
ii) Compare it with TCP/IP model. [4]
13. a) Explain the implementation of connectionless and connection-oriented services in network layer and compare them. [16]
Or
b) i) Use shortest path routing algorithm to find the route from A to D for the network topology given below: [8]



- ii) Consider the network given below. Distance vector routing is used, and the following vectors have just come in to router C: from B: (5, 0, 8, 12, 6, 2); from D: (16, 12, 6, 0, 9, 10); and from E: (7, 6, 3, 9, 0, 4). Cost of the links from C to B, D, and E, are 6, 3, and 5, respectively. What is C's new routing table? How it is constructed? Give both the outgoing line to use and the cost. [8]

P.T.O.



Network for Question 13.b).ii)

14. a] i) Explain the concept of name servers. How a resolver looks up for a remote name? [8]
 ii) Write a note on domain resource records. [8]
 Or
- b] i) Give an architectural overview of World Wide Web with the details of client and server side activities. [12]
 ii) Write a note on Hyper Text Markup Language. [4]
15. a] i) With neat diagrams explain how security and authentication are achieved in public key crypto systems. [8]
 ii) How columnar transposition works? Use it to encrypt the message 'all the best for your semester examinations' with 316254 as key. [8]
 Or
- b] Give the steps involved in RSA algorithm with a simple example and also the algorithm for raising a number to a larger power. Find $23^{25} \bmod 30$ using the above algorithm. [16]

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