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Question Paper Code : 41148

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Fifth Semester

Computer Science and Engineering

080230022 — COMPUTER NETWORKS

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List out the five components of a data communication system.

2. Identify the contrasting features that differentiate controlled access protocols with channelizing protocols.

3. List any four kinds of error which remains undetectable by the checksum.

4. Define framing and also specify the need for framing.

5. Write the net id, host id and subnet id of the IP addresses 117.34.3.8 and 207.3.54.12.

6. What are the functions of RIP message?

7. What is the minimum size of the process data that can be encapsulated in UDP datagram?

8. Specify the type of the protocol that can be used for an application that needs to protect the boundaries of its messages. Justify your answer.

9. Why is SONET called as synchronous network?

10. Write down any two error correction technique used in wireless links.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the various layers present is OSI model and specify their functions. (8)

    (ii) Discuss network topologies in detail with their performance indicator. Also draw and show the hybrid topology with star as back bone and four ring network. (8)

    Or

    (b) (i) Explain the difference between a protocol and service interface in terms of ISO seven layer model. (7)

    (ii) Compare and contrast between USMA/CD and CSMA/CA with suitable examples. (9)

12. (a) (i) Identify the contrast between two basic approaches that deals with error transmission in terms of storage and bandwidth requirement. (6)

    (ii) Show the operation of go-back-n protocol, when a data packet or ACK is lost. Explain with the help of timing diagram. (10)

    Or

    (b) (i) Discuss the sliding window protocols in detail. (8)

    (ii) Show how HDLC differs from the other common protocols for point to point access. Explain with an example scenario. (8)

13. (a) (i) What is the purpose of subnetting? Explain the various types of subnet mask. (8)

    (ii) Give brief discussion about the flow based routing protocol with suitable illustration. (8)

    Or

    (b) (i) Explain how super-netting enhances the scalability. Specify the purpose of super-net CIDR mask. (8)

    (ii) Enumerate in detail about the distance vectoring protocol with suitable illustrations of routing tables. (8)

14. (a) (i) Explain how the packets are transmitted by using TCP approach. Explain in detail with the neat sketch. (9)

    (ii) Discuss briefly the role of DNS in internet. (7)

    Or

    (b) (i) Explain in brief about the Simple Mail Transfer Protocol. (7)

    (ii) Describe with an example how does HTTP request retrieves the document usr/users/doc/doc1. Show the response for

        (1) If the document is moved to usr/deads/doc1

        (2) If there is syntax error in the request. (9)

15. (a) (i) Describe briefly about the peer-to peer network with suitable illustrations. Specify its advantages and disadvantages. (8)

(ii) Enumerate in detail about overlay network structure with suitable illustrations. (8)

Or

(b) Write brief notes on the following :

(i) Sensor network (8)

(ii) Ad hoc network. (8)

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