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Question Paper Code: UG406

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Artificial Intelligence & Machine learning

21UAM406-COMPUTER COMMUNICATION NETWORKS

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

PART A - (5 x 1 = 5Marks)

1. A television broadcast is an example of transmission. CO1-U
(a) Half duplex (b) Simplex (c) Full-duplex (d) Automatic
2. What is the hamming distance between the codes '11001011' '10000111' CO1-U
(a) 2 (b) 3 (c) 4 (d) 5
3. Datagrams are routed their destination with the help of CO1-U
(a) Switch Table (b) Datagram Table (c) Segment Table (d) Routing Table
4. Transport layer aggregates data from different applications into a single CO1-U
stream before passing it to _____
(a) network address (b) host address (c) both (a) and (b) (d) none of the above
5. Electronic mail uses which application layer protocol? CO1-U
(a) SMTP (b) HTTP (c) FTP (d) SIP

PART – B (5 x 3= 15Marks)

6. Show the hybrid topology with a ring backbone and three bus networks. CO1-U
7. Define multiple access protocols. CO1-U
8. Differentiate between classful addressing and classless addressing in IPv4. CO1-U
9. In the slow start phase of the TCP congestion control algorithm, what is the size CO1-U
of the congestion window?
10. What is the purpose of Domain Name System?List the three main division of CO1-U
the domain name space.

PART – C (5 x 16= 80 Marks)

11. (a) Illustrate with neat sketch of OSI reference model and explain various functions of the layers. CO1-U (16)

Or

- (b) Explain in detail about the various types of multiplexing with neat diagram? CO1-U (16)

12. (a) Explain in detail about Error detection and Error correction with an example. CO1-U (16)

Or

- (b) Discuss the following multiple access method. CO1-U (16)
i. ALOHA ii. CSMA / CD.

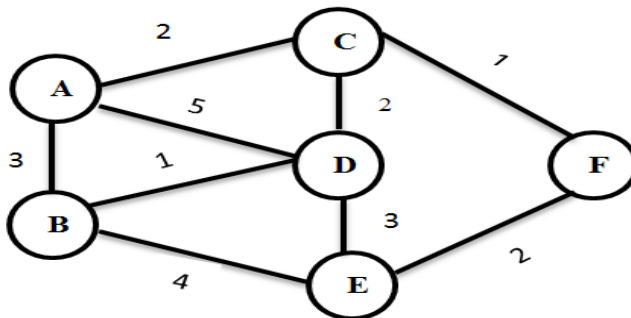
13. (a) Create a system of three LANs with four bridges. The bridges (B1 to B4) connect the LANs as follows: CO2-App (16)

- a. B1 connects LAN 1 and LAN 2.
- b. B2 connects LAN 1 and LAN 3.
- c. B3 connects LAN 2 and LAN 3.
- d. B4 connects LAN 1, LAN 2, and LAN 3.

Choose BI as the root bridge. Show the forwarding and blocking ports, after applying the spanning tree procedure.

Or

- (b) Consider a network with 6 routers A to F connected with links having weights as shown in the following diagram CO2-App (16)



Find the Shortest Path from one node to every node in the network using Link State based Routing Algorithm

14. (a) Explain the User Datagram Protocol (UDP) in detail. CO1-U (16)

Or

- (b) Illustrate Leaky Bucket Algorithms with an example. CO1-U (16)

15. (a) Explain about Domain Name system (DNS) and Dynamic Domain Name System (DDNS) in detail. CO1-U (16)
- Or
- (b) (i) Illustrate the WWW and SNMP CO1-U (8)
- (ii) Explain about the Bluetooth in detail. CO1-U (8)

