Total No. of Questions: 6

Total No. of Printed Pages:2

| Enrollment | No |
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Faculty of Engineering

End Sem (Even) Examination May-2022

CA5CO26 Computer Network Fundamentals Programme: MCA Branch/Specialisation: Computer

Application

Maximum Marks: 60 Duration: 3 Hrs.

of

| | | | ernal choices, if any, are indicated. Answe | ers |
|-------------------------------------|-------|----------------------------------|--|-----|
| 2.1 (| (MCQ | s) should be written in full ins | stead of only a, b, c or d. | |
| 2.1 | i. | A single channel is shared by | multiple signals by | 1 |
| | | (a) Analog modulation | (b) Digital modulation | |
| | | (c) Multiplexing | (d) Phase modulation | |
| | ii. | Which one of the following | ng is not a function of network layer? | 1 |
| | | (a) Routing | (b) Inter-networking | |
| | | (c) Congestion control | (d) Error control | |
| | iii. | Header of a frame generally | contains- | 1 |
| | | (a) Synchronization bytes | (b) Addresses | |
| | | (c) Frame identifier | (d) All of these | |
| | iv. | In the method, at | fter the station finds the line idle, it sends | 1 |
| | | its frame immediately. If the | line is not idle, it continuously senses the | |
| | | line until it finds it idle. | | |
| | | (a) P-persistent | (b) Non-persistent | |
| | | (c) 1-persistent | (d) None of these | |
| | v. | IEEE has defined the spe | ecifications for a wireless LAN called | 1 |
| | | , which covers the | ne physical and data link layers. | |
| | | (a) 802.3 (b) 802.5 | ` / | |
| | vi. | ATM can be used for | · | 1 |
| | | (a) Local area network | (b) Wide area network | |
| | | (c) Campus area network | (d) Networks covering any range | |
| | vii. | In forwarding, the fu | all IP address of a destination is given in | 1 |
| | | the routing table. | | |
| | | (a) Next-hop | (b) Network-specific | |
| (c) Host-specific (d) None of these | | ` ' | | |
| | viii. | Select the address of class A, | | 1 |
| | | (a) Reserved (b) Multicast | (c) Unicast (d) None of these | |

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[2]

| | ix. | The solution to decrease the load on the network when congestion occurs is (a) Splitting the traffic over multiple routes (b) Increasing the transmission power (c) Usage of spare routers | 1 |
|-----|-------|---|---|
| | v | (d) Denying service to the users | 1 |
| | х. | Application layer offers service. (a) End-to-end (b) Process-to-process | 1 |
| | | (c) Both (a) and (b) (d) None of these | |
| | | (c) Both (a) and (b) (a) Profit of these | |
| Q.2 | i. | Is there any relationship between transmission media and topology? | 2 |
| | ii. | Draw the OSI network architecture. Also explain the functionalities of | 8 |
| | | any three layers in detail. | |
| OR | iii. | What is multiplexing? Explain various multiplexing techniques with | 8 |
| | | suitable diagram. | |
| 0.0 | | | _ |
| Q.3 | | What type of errors is detected by parity check? | 2 |
| | ii. | What is ARQ? Explain different types of ARQ techniques with suitable diagram. | 8 |
| OR | iii | Explain CSMA protocols with collision detection and avoidance. | 8 |
| on | 111. | Explain Colle protocols with comploin detection and avoidance. | Ü |
| Q.4 | i. | What is the relationship between TPs, VPs, and VCs? | 2 |
| | ii. | Describe the issues involved in using ATM technology in LANs. | 8 |
| OR | iii. | Explain the frame format of 802.3, 802.4 and 802.5. | 8 |
| | | | |
| Q.5 | i. | What is subnet addressing? Illustrate your answer with the help of an | 2 |
| | | example. | |
| | ii. | Explain OSPF (Open Shortest Path First) routing algorithm with | 8 |
| OR | iii. | example. What is IP protocol? Differentiate between IPv4 and IPv6. | 8 |
| OK | 1111. | what is if protocor: Differentiate between if v4 and if vo. | o |
| Q.6 | i. | What are the techniques used to improve Quality of Service (QoS)? | 2 |
| | ii. | Write short notes on any two of the following: | 8 |
| | | (a) WWW (b) Email (c) DNS | |
| OR | iii. | What is congestion control? Explain the token bucket algorithm. | 8 |

Marking Scheme CA5CO26 Computer Network Fundamentals

|) .1 | i. | A single channel is shared by multiple signals by | · | 1 | |
|-------------|-------|---|---------------------------|---|--|
| | | (c) Multiplexing | 1 Mark | | |
| | ii. | Which one of the following is not a function (d) Error control | of network layer? 1 Mark | 1 | |
| | iii. | Header of a frame generally contains- | | 1 | |
| | | (d) All of these | 1 Mark | | |
| | iv. | In the method, after the station finds th | e line idle, it sends | 1 | |
| | | its frame immediately. If the line is not idle, it conti | inuously senses the | | |
| | | line until it finds it idle. | | | |
| | | (c) 1-persistent | 1 Mark | | |
| | v. | IEEE has defined the specifications for a wir, which covers the physical and data lin | |] | |
| | | (c) 802.11 | 1 Mark | | |
| | vi. | ATM can be used for | | 1 | |
| | | (d) Networks covering any range | 1 Mark | | |
| | vii. | | | | |
| | | the routing table. | C | | |
| | | (c) Host-specific | 1 Mark | | |
| | viii. | Select the address of class A, B and C are- | | 1 | |
| | | (c) Unicast | 1 Mark | | |
| | ix. | The solution to decrease the load on the network when congestion | | | |
| | | occurs is | | | |
| | | (d) Denying service to the users | 1 Mark | | |
| | х. | Application layer offers service. | | 1 | |
| | | (a) End-to-end | | | |
| 2.2 | i. | Relationship between transmission media and topol | ogy | 2 | |
| | | Justification | 2 Marks | | |
| | ii. | OSI network architecture | | 8 | |
| | | Diagram | 2 Marks | | |
| | | Each layers | 2 Marks each | | |
| | | | (2 Marks*3) | | |
|)R | iii. | Multiplexing techniques | | 8 | |
| | | Definition | 2 Marks | | |
| | | Techniques | 2 Marks each | | |
| | | | (2 Marks*3) | | |
| 2.3 | i. | Definition | 2 Marks | 2 | |
| | | | | | |

| | ii. | ARQ | | 8 |
|---|------|---|-------------|---|
| | | Comparison | 6 Marks | |
| | | Diagram. | 2 Marks | |
| OR | iii. | CSMA protocols | | 8 |
| | | Explanation | 6 Marks | |
| | | Diagram. | 2 Marks | |
| Q.4 | i. | Types of error | 2 Marks | 2 |
| | ii. | ATM technology in LANs. | | 8 |
| | | Explanation | 6 Marks | |
| | | Example | 2 Marks | |
| OR | iii. | Frame format of 802.3, 802.4 and 802.5. | | 8 |
| | | Definition | 2 Marks | |
| | | Differences | 6 Marks | |
| Q.5 | i. | Subnet addressing | | 2 |
| | | Definition | 1 Mark | |
| | | Example. | 1 Mark | |
| | ii. | OSPF (Open Shortest Path First) | | 8 |
| | | Explanation | 6 Marks | |
| | | Diagram. | 2 Marks | |
| OR iii. What is IP protocol? Differentiate between IPv4 and IPv6. | | | 8 | |
| | | Definition | 2 Marks | |
| | | Explanation with example. | 6 Marks | |
| Q.6 i. | | Techniques used to improve Quality of Service (Qo | oS) | 2 |
| | | List of techniques | 2 Marks | |
| | ii. | Write short notes on any two | | 8 |
| | | (a) WWW (b) Email (c) DNS | | |
| | | Each Short note | 4 Marks | |
| | | | (4 Marks*2) | |
| OR | iii. | Congestion control | | 8 |
| | | Definition | 2 Marks | |
| | | Explanation | 6 Marks | |
| | | ***** | | |