MASTER of COMPUTER APPLICATION
SECOND SEMESTER
COMPUTER NETWORK
MCA - 203
(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.   Full Marks : 70

(PART-A : Objective)

Time : 20 min.   Marks : 20

Choose the correct answer from the following: *1×20=20*

1. The _____ refers to the mechanism & technique to keep the load below the capacity in a network.
   a. Collision control   b. Choke packet
   c. Congestion control   d. All of the above

2. In _____, there is no need for defining the boundaries of the frames.
   a. Framing   b. Fixed size framing
   c. Noiseless channel   d. Variable size framing

3. In _____, we can avoid unnecessary transmission by sending only frames that are corrupted.
   a. Stop-And-Wait ARQ   b. Noisy channel
   c. Selective repeat ARQ   d. GO-BACK-N ARQ

4. In GO-BACK-N ARQ sliding window, if m is the number of bits for the sequence number, then the size of the send window must less than _____.
   a. $2^m + 2$ b. 2^{m+2}
   c. 2^m d. One half of 2^m

5. The _____ is a bit oriented protocol for communication over point-to-point and multipoint links.
   a. Piggybacking   b. HDLC
   c. Stop-And-Wait ARQ   d. PPP

6. Which method was developed to minimize the chance of collision and increase the performance?
   a. CSMA   b. ALOHA
   c. Token Ring   d. IEEE Standards

7. The _____ was designed for a radio or wireless LAN, but it can be used on any shared medium.
   a. Token Bus   b. ALOHA
   c. SLOTTED ALOHA   d. Pure ALOHA

(PART-B : Descriptive)

Time : 2 hrs. 40 min.   Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is ALOHA? Explain its types along with example. Explain the different layers of IEEE 802.X diagrammatically.   2+4+4 =10

2. What is RPC? How does it work in a network, explain diagrammatically. What are the two functions that must be performed by RPC protocol?   3+5+2 =10

3. What is the importance of using X.25 in virtual-circuit switching? Explain the different types of Internetworking Issues in a network.   5+5=10

4. What is the significance of using cryptography? Define symmetric and asymmetric key cryptography along with their differences.   3+7=10

5. Write down about the following protocols used in Data Link Layer: 5+5=10
   i.   HDLC
   ii.   Point-To-Point Protocol

6. What is the importance of the transmission modes? Define the 3 types of transmission modes. Differentiate between analog & digital signal of data transmission.   2+6+2 =10

7. What are the error control techniques used in Data Link Layer? What is an ARQ? How it is useful in the noisy channel of Data Link Layer Protocols.   4+2+4 =10

8. What do you mean by IP Address? How to differentiate the IPV4 and IPV6? Change the following addresses from binary notation to dotted-decimal notation.   2+4+2+ 2=10
   a.   10000001 00001011 00001011 11101111
   b.   11000001 10000011 00011011 11111111

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8. The _____ is a device that allows division of a large network into two smaller, more efficient networks.
   a. Switch
   b. Router
   c. Bridge
   d. Hub

9. The data link layer-
   a. Collects data from all the links
   b. Detects and corrects erroneous bits
   c. Transfers data across
   d. Links data with each other

10. Cladding mechanism is used in _____.
    a. Coaxial cable
    b. STP
    c. Optical fiber
    d. UTP

11. The _____ is used when the bandwidth of the transmission medium between the multiplexer and demultiplexer is much greater than the requirement from any one stream being multiplexed.
    a. Frequency Division Multiplexing
    b. Time Division Multiplexing
    c. Phase Shift Keying
    d. Frequency Shift Keying

12. The _____ of packets across the subnet is considered to be the most important function of the network layer.
    a. Congestion control algorithms
    b. Routing
    c. Gateways
    d. Error control techniques

13. The _____ cable has a metal foil that covers each pair of insulated conductors to eliminate crosstalk.
    a. UTP Cable
    b. Co-Axial cable
    c. Optical fiber
    d. STP Cable

14. The purpose of _____ layer is to provide transparent transfer of data between end users.
    a. Network
    b. Session
    c. Transport
    d. Application

15. A _____ acts as transceivers that receives, amplifies & retransmits information.
    a. Stub
    b. Repeater
    c. Switches
    d. Bridges

16. In _____ mode, the communication channel is used in both directions but only one direction at a time.
    a. Simplex
    b. Half duplex
    c. Full duplex
    d. All of these

17. The binary notation & dotted decimal notation methods are used in-
    a. IPv4
    b. IPv6
    c. Both a, b
    d. Packet Switching

18. "The choice of the route to use from source to destination or from one node to other is computed in advance"- is the property of-
    a. Static routing
    b. Dynamic routing
    c. Forward routing
    d. Session routing

19. In _____ topology, every node has exactly 2 neighbors for communication.
    a. Bus
    b. Star
    c. Ring
    d. Tree

20. _____ of packets across the subnet is considered to be the most important function of the network layer.
    a. Congestion control algorithms
    b. Routing
    c. Error control techniques
    d. Gateways

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