

**MASTER OF COMPUTER APPLICATION
SECOND SEMESTER (REPEAT)
DATA COMMUNICATION AND COMPUTER NETWORKS
MCA-205**

**SET
A**

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 mins.

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- _____ refers to the way a network is laid out, either physically or logically.
 - Line configuration
 - Topology
 - Transmission mode
 - Modulation mode
- When a signal loses energy in overcoming the resistance of a medium, this is called:
 - Attenuation
 - Distortion
 - Noise
 - None of the above
- Which type of switching network involves the establishment of a dedicated path between two stations?
 - Packet
 - Circuit
 - Message
 - Manual
- In _____, if a device has no data to send, its time slot remains empty.
 - Synchronous TDM
 - Asynchronous TDM
 - FDM
 - WDM
- The IPv4 protocol provides:
 - Congestion control
 - IP information for controlling internet trafficking
 - Unique, numerical IP address
 - All of these
- The _____ was designed for a radio or wireless LAN, but it can be used on any shared medium.
 - Pure ALOHA
 - SLOTTED ALOHA
 - ALOHA
 - Token Bus
- The binary notation & dotted decimal notation methods are used in:
 - IPv4
 - IP
 - Both a & b
 - Packet Switching
- All the routing algorithms use _____ techniques to handle deadlocks restricting routing.
 - Deadlock prevention
 - Deadlock recovery
 - Deadlock avoidance
 - All of the above
- In _____ encryption method, every user has the same encryption key.
 - Symmetric key
 - Asymmetric key
 - Digital signature
 - Public key

10. The _____ is a stateless protocol where the client machine at user end initiates a TCP connection to server on port 80.
- DNS
 - FTP
 - SMTP
 - HTTP
1. The _____ layer defines the types of encoding to be used.
- Application
 - Transport
 - Data link
 - Physical
2. Which of the following can determine the category of a network?
- Size
 - The physical architecture
 - Ownership
 - All of the above
3. Which factor makes twisted-pair cable superior to the fiber-optic cable?
- Signal attenuation
 - Noise resistance
 - Bandwidth range
 - Cost
4. A multiplexer _____ several transmission streams while a demultiplexer _____ them.
- Combines; separates
 - Compress; decompresses
 - Encrypts; decrypts
 - Separates; combines
5. The _____ comes under 802.5 standard of IEEE 802 standards.
- CSMA/CD
 - Token Bus
 - Token ring
 - MAN
6. In _____, there is no need for defining the boundaries of the frames.
- Framing
 - Fixed size framing
 - Variable size framing
 - Noiseless channel
7. _____ of packets across the subnet is considered to be the most important function of the network layer.
- Congestion control algorithms
 - Routing
 - Error control techniques
 - Gateways
8. 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 _____.
- 2^m
 - One half of 2^m
 - 2^{m+2}
 - 2^{m+2}
9. The _____ is a client/server application that lets a computer user view, store and update files on a remote computer as though they were on the user's own computer.
- Network file system
 - Remote login
 - Cryptography
 - Remote procedure call
10. The _____ is a protocol that one program can use to request a service from a program located in another computer on a network without the knowledge of network's detail.
- Network file system
 - Remote login
 - Telnet
 - Remote procedure call

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

1. a) What is the significance of using Data Encryption? Explain all types of data encryption techniques. 6+4=10
b) What is the concept of RPC? How it works in a network? Explain with proper diagram.
2. a) What are the standards used in IEEE 802.X? Explain diagrammatically. 4+6=10
b) Why framing is used in Computer Network? Explain the different methods of framing along with the examples.
3. Explain functions of different layers of TCP/IP reference model. How it is different from OSI reference model? 10
4. "When a device has multiple paths to reach a destination, it always selects one path by preferring it over others"- Identify the process & write down its types along with diagram. 10
5. a) Why congestion should be avoided in a network? 3+7=10
b) What are the different types of congestion, explain each of the types with their sub-types.
6. a) What do you mean by Communication Media? 1+6+3=10
b) Explain the wired media along with suitable diagrams.
c) Mention the advantages and disadvantages for the wired media.
7. a) What do you mean by ALOHA? Explain the concepts of Pure Aloha and Slotted Aloha along with specifying the differences among them. 5+5=10
b) What is ARQ? How it is useful in the noisy channel of DLL protocols?
8. a) How sliding window protocol differs from other data link protocols? 4+6=10
b) How many types of sliding window protocols are available? Explain with examples.

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