

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION MAY 2024
(Fifth Semester)

Branch – SOFTWARE SYSTEMS (five year integrated)

DATA COMMUNICATION AND NETWORKING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 x 1 = 10)

- 1 Which of the following network topologies has the highest transmission speed?
 - (i) LAN
 - (ii) WAN
 - (iii) MAN
 - (iv) Both LAN and WAN have equal transmission speeds
- 2 The physical layer is concerned with
 - (i) bit-by-bit delivery
 - (ii) process to process delivery
 - (iii) application to application delivery
 - (iv) Port to port delivery
- 3 Error detecting at the data link layer is achieved by
 - (i) Equalization
 - (ii) Bit Stuffing
 - (iii) Hamming Codes
 - (iv) Cyclic Redundancy Code
- 4 Which stations can detect whether the channel is in use prior to transmitting?
 - (i) Collision assumption
 - (ii) Carrier Sense
 - (iii) Slotted time
 - (iv) Single-channel assumption
- 5 Retransmission of packets must not be done when
 - (i) Packet is lost
 - (ii) Packet is corrupted
 - (iii) Packet is needed
 - (iv) Packet is error-free
- 6 The packet sent by a node to the source to inform it of congestion is called _____
 - (i) Explicit
 - (ii) Discard
 - (iii) Choke
 - (iv) Backpressure
- 7 In computer network terminology RTS is
 - (i) Ready to Sequence
 - (ii) Ready Task Set
 - (iii) Request to Send
 - (iv) Ready Time Status
- 8 What is the main advantage of UDP?
 - (i) More overload
 - (ii) Reliable
 - (iii) Low overhead
 - (iv) Fast

Cont...

- 9 File Transfer Protocol uses _____for control connection and_____for Data connection
- Stateless Connection, Non-Persistent TCP Connection
 - Persistent TCP Connection, Non-persistent TCP Connection
 - Non- persistent TCP Connection, Persistent Connection
 - FTP is a connection-less protocol, None
10. In computing----- is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules
- Spyware
 - Cookie
 - Spam
 - Firewall

SECTION - B (25 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a. List the advantages of Computer Networks.
(OR)
- b. Elucidate Guided transmission media.
- 12 a. Discuss Error Control and Flow Control Mechanism.
(OR)
- b. Evaluate Hamming Code Error Correcting mechanism.
- 13 a. Compare Virtual – Circuit and Datagram Networks.
(OR)
- b. Discuss the Distant Vector Routing algorithm.
- 14 a. Mention the service provided by the transport layer to its upper layers.
(OR)
- b. Discuss any 8 assigned ports in TCP.
- 15 a. Analyse DNS.
(OR)
- b. State the importance of Digital Signatures.

SECTION -C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

Question No. 16 is Compulsory

16. Compare and Contrast FDM and TDM.
- 17 a. Evaluate Simplex stop and wait protocol for error-free channel
(OR)
- b. Analyse Parity bits and Cyclic Redundancy Checks in error handling.
- 18 a. Discuss on Explicit Congestion Notification
(OR)
- b. Compare and contrast IPV4 Vs IPV6.
- 19 a. Discuss three-way handshake in transport protocols.
(OR)
- b. Describe the format of the TCP header.
- 20 a. Elucidate the architecture and services of email.
(OR)
- b. Enumerate AES algorithm.