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Code No. : 8080   Sub. Code : WCAE 12

M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023

First Semester

Computer Applications – Elective

ADVANCED COMPUTER NETWORKS

(For those who joined in July 2023 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL the questions.

Choose the correct answer :

1. Which of the following is not a type of network topology?

    (a) Star   (b) Bus

    (c) Loop   (d) Mesh

2. Which OSI layer is responsible for establishing, maintaining, and terminating connections between devices?

    (a) Physical layer

    (b) Data Link layer

    (c) Transport layer

    (d) Session layer

3. Coaxial cables are commonly used for:

    (a) Internet communication

    (b) Satellite communication

    (c) Infrared communication

    (d) Cellular networks

4. ——————— type of switching is commonly used in telephone networks, where a dedicated path is established for the entire duration of a call.

    (a) Circuit switching

    (b) Packet switching

    (c) Message switching

    (d) Cell switching

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5. Virtual circuit networks are often used in ——————— type of data transmission.

    (a) Real-time video streaming

    (b) Web browsing

    (c) File transfer

    (d) Email communication

6. Which device is commonly used to provide wireless connectivity in a Wi-Fi network?

    (a) Switch   (b) Hub

    (c) Modem   (d) Router

7. Which protocol is commonly used at the network layer for routing and forwarding data packets on the Internet?

    (a) HTTP   (b) TCP

    (c) IP   (d) UDP

8. How many bits are in an IPv6 address?

    (a) 16 bits   (b) 32 bits

    (c) 64 bits   (d) 128 bits

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9. Which of the following is a common example of an interior gateway unicast routing protocol?

    (a) PIM (Protocol Independent Multicast)

    (b) OSPF (Open Shortest Path First)

    (c) IGMP (Internet Group Management Protocol)

    (d) BGP (Border Gateway Protocol)

10. Which layer of the OSI model is responsible for end-to-end communication, data segmentation, and error detection and correction?

    (a) Physical layer

    (b) Data Link layer

    (c) Transport layer

    (d) Network layer

11. ——————— congestion control mechanism involves slowing down the rate of data transmission to avoid overloading the network?

    (a) Flow Control

    (b) Error control

    (c) QoS

    (d) Network Monitoring

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12. Which of the following is a common QoS parameter used to measure network performance?

    (a) Maximum device limit

    (b) Bandwidth

    (c) Network latency

    (d) Network security

13. What does DNS stand for in the context of domain name space?

    (a) Domain Name Server

    (b) Domain Name Space

    (c) Domain Network Service

    (d) Digital Naming System

14. In remote logging, which of the following types of information is typically collected and sent to a central server?

    (a) Passwords

    (b) Event and error logs

    (c) Video streams

    (d) RAM contents

15. SNMP is primarily used for

    (a) Data encryption

    (b) Network monitoring and management

    (c) File sharing

    (d) Video streaming

PART B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

16. (a) Compare half duplex and full duplex data flow.

    Or

    (b) Describe the key elements of Protocol.

17. (a) What are circuit switching advantages and disadvantages?

    Or

    (b) Difference between Flow Control and Error Control.

18. (a) Discuss about the IPV4 addressing in network layer.

    Or

    (b) Explain about Internet Control Message Protocol.

19. (a) Explain the role of the transport layer.

    Or

    (b) What is the difference between TCP and UDP?

20. (a) What is the difference between namespace and domain space?

    Or

    (b) What are the features of remote login?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

21. (a) Explain about TCP/IP Protocol suite.

    Or

    (b) Describe about Unguided media.

22. (a) Illustrate about wired LAN.

    Or

    (b) Explain the satellite network.

23. (a) Demonstrate about the Unicast routing protocols.

    Or

    (b) Explain about Network layer delivery.

24. (a) Explain the concept of process-to-process delivery.

    Or

    (b) Describe congestion control and its significance in the context of the transport layer in a network.

25. (a) What is a network management system and how does it facilitate the efficient operation and maintenance of computer networks?

    Or

    (b) How does SNMP (Simple Network Management Protocol) contribute to the effective management and monitoring of network devices? Explain.

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