

**LOCATION BIRMINGHAM
LEVEL 4**

EXAMINATION PERIOD

SEPTEMBER 2023

MODULE CODE: ACCA4024

NETWORK AND CYBERSECURITY ESSENTIALS

TIME: 1 HOURS

TOTAL: 50 MARKS

ANSWER ALL QUESTIONS

PART 1 – 40 MCQs – Total 40 Marks

PART 2 – 5 Descriptive Questions – Total 10 Marks - Each question carries 2 marks

Equipment or materials required – None

The Candidates are not permitted to bring dictionaries; text books/case studies or any other reference materials into the exam room.

The Candidates are only permitted to use calculators.

Show all your calculations in your exam book

PART 1 – Total 40 Marks

Q 1. In which of the following scenarios would a Local Area Network (LAN) be most commonly used?

- a. Connecting multiple offices of a multinational corporation located in different countries.
- b. Linking computers and devices within a single household.
- c. Providing internet access to an entire city.
- d. Enabling communication between satellites in space.

Q 2. Which type of IP address is used to identify a group of devices on the same network?

- a. Private IP address
- b. Public IP address
- c. Broadcast IP address
- d. Multicast IP address

Q 3. What is the purpose of ARP (Address Resolution Protocol)?

- a. To map IP addresses to physical MAC addresses
- b. To resolve domain names to IP addresses
- c. To authenticate devices on the network
- d. To establish secure communication channels

Q 4. A _____ copies and sends a transmission to every destination node on the network.

- a. Unicast
- b. Broadcast
- a. Full duplex
- b. FDDI
- c. Multicast

Q 5. What is a limitation of deploying a peer-to-peer network model?

- a. Lack of central administration
- b. Lack of scalability
- c. High security
- d. All of the above

Q 6. Which of these technologies is used when a consumer successfully makes payment by simply placing her debit card close to a pay terminal at a shop?

- a. Bluetooth
- b. 3G
- c. WiFi
- d. RFID

Q 7. Twisted pair cable can be extended for several miles and could be immune for EMI and RFI?

- a. True
- b. False

Q 8. Which layer of the OSI model is responsible for routing and logical addressing?

- a. Application layer
- b. Transport layer
- c. Network layer
- d. Data link layer

Q 9. Transport layer describes how a device accesses and sends data over the network media in the TCP/IP model?

- a. True
- b. False

Q 10. An unauthorized user is a network issue.

- a. Performance
- b. Reliability
- c. Security
- d. All the above

Q 11. What is the reverse process of placing one message inside another message format is called?

- a. Fragmentation
- b. De-fragmentation
- c. Encapsulation
- d. De-capsulation

Q 12. A network design engineer has been asked to design the IP addressing scheme for a customer network which requires 255 hosts. The network design engineer decides to use IP addresses from the 192.168.10.0/24 network. Will this IP addressing scheme accommodate all the hosts in the customer network?

- a. Yes
- b. No

Q 13. How is an IPv4 address represented?

- a. In binary format
- b. In hexadecimal format
- c. In octal format
- d. In dotted-decimal notation

Q 14. DHCP is used to automatically assign IP address to hosts.

- a. True
- b. False

Q 15. Private IP addresses are designed to be exclusively used for external networks and they can be used on the Internet

- a. True
- b. False

Q 16. The URL identifies the MAC address of the web server.

- a. True
- b. False

Q 17. What is the size of the IP version 4?

- a. 22 bytes
- b. 32 bits
- c. 32 bytes
- d. 99 bytes

Q 18. Live streaming audio and video applications require receipt of all packets regardless of delay.

- a. True
- b. False

Q 19. What is the loopback address in IPv4, commonly used for testing network interfaces?

- a. 127.0.0.1
- b. 10.0.0.1
- c. 192.168.0.1
- d. 0.0.0.0

Q 20. What does the acronym DNS stand for in networking?

- a. Dynamic Network Service
- b. Domain Name System
- c. Direct Network Source
- d. Digital Naming System

Q 21. The _____ is the physical path over which a message travels

- a. IP Address
- b. Medium
- c. Protocol
- d. Route

Q 22. What is the purpose of a subnet mask in an IPv4 address?

- a. To identify the host address
- b. To identify the network address
- c. To identify the default gateway
- d. To identify the DNS server

Q 23. In Wireless networks, which wireless security initiative helps to secure sensitive information during data transit?

- a. IP Address filtering
- b. Authentication
- c. MAC Address filtering
- d. Encryption

Q 24. Router operates in Transport layer of OSI Reference Model

- a. True
- b. False

Q 25. Which protocol is used for sending emails over the internet?

- a. FTP
- b. SMTP
- c. HTTP
- d. ICMP

Q 26. Which one of the following describes the User Datagram protocol best?

- a. Maximum bandwidth
- b. Low latency
- c. Reliable
- d. All of the above

Q 27. A network technician is statically assigning a class B IP address as 172.16.20.10 and Subnet Mask as 255.0.0.0 to a PC. What is wrong in this configuration?

- a. Wrong subnet mask, it should be 255.254.0.0
- b. Wrong subnet mask, it should be 255.255.0.0
- c. Wrong subnet mask, it should be 255.255.1.0
- d. Wrong subnet mask, it should be 255. 255.255.15

Q 28. What is the purpose of a default gateway in a network?

- a. To provide internet connectivity
- b. To forward data between different networks
- c. To connect devices within a LAN
- d. To secure network traffic

Q 29. What is a firewall?

- a. A proxy server.
- b. A router
- c. Hardware and/or software that restricts access to data on a network.
- d. A private server on a public network

Q 30. The Ping command is used to

- a. None of the above
- b. Display the network connections
- c. Test the end-to-end connectivity between hosts
- d. Display the route information from source to destination

Q 31. What is the maximum number of hosts that can be accommodated in a network with a subnet mask of 255.255.255.240?

- a. 14
- b. 16
- c. 30
- d. 62

Q 32. The function that provides secure remote access to servers

- a. DHCP
- b. DNS
- c. SSH
- d. Telnet

Q 33. What is the broadcast address for the IP address 192.168.1.5 with a subnet mask of 255.255.255.0?

- a. 192.168.1.0
- b. 192.168.1.255
- c. 192.168.0.255
- d. 192.168.1.254

Q 34. One of the main advantages of wireless network technology is

- a. Easy expansion
- b. Inexpensive
- c. Fairly easy to install
- d. All of the above

Q 35. Which layer in the OSI model do MAC addresses and switches use?

- a. Physical
- b. Data Link
- c. Network
- d. Transport

Q 36. All devices that wish to participate in the WLAN need not have the same SSID.

- a. False
- b. True

Q 37. Which TCP/IP layer is responsible for establishing, maintaining, and terminating sessions between applications?

- a. Transport layer
- b. Network layer
- c. Application layer
- d. Internet layer

Q 38. Which OSI layer is responsible for providing error detection and correction during data transmission?

- a. Presentation layer
- b. Session layer
- c. Data link layer
- d. Transport layer

Q 39. What type of communication is sent to a single designated host?

- a. Unicast
- b. Broadcast
- c. Multicast
- d. Anycast

Q 40. What is the default subnet mask for a Class C IP address?

- a. 255.255.0.0
 - b. 255.255.255.0
 - c. 255.0.0.0
 - d. 255.255.255.255
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PART 2 – each question carries 2 marks

Q 41. What are the two most important pieces of information a ping command provides about a network connection?

Q 42. Briefly explain the Physical Layer of the OSI model and give two examples of equipment it defines?

Q 43. What are the differences between fibre optic cable and twisted pair cable?

Q 44. Briefly describe two types of malware/malicious code?

Q 45. Briefly describe two ways to defend against malicious attack on a wireless network.