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LOCATION BIRMINGHAM

LLEOLIAD BIRMINGHAM

LEVEL 4

LEFEL 4

**EXAMINATION PERIOD
SEPTEMBER 2024**

**CYFNOD ARHOLIADAU
MEDI 2024**

**MODULE CODE: ACCA4024
NETWORK AND CYBER SECURITY ESSENTIALS**

TIME: 1 HOURS

TOTAL: 100 MARKS

ANSWER ALL QUESTIONS

Equipment or materials required – None

The Candidates are not permitted to bring dictionaries; textbooks/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

ANSWER ALL QUESTIONS

PART 1 (60 Marks) – 30 MCQs - Each question carries 2 marks

- 1 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

- 2 Piggybacking is one of the types of deception.**

 - a. True
 - b. False

- 3 What is the process of placing one message inside another message format is called?**

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

- 4 How is an IPv4 address represented?**

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

- 5 The Ping command is used to**

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

- 6 Default gateway identifies the networking device that the host uses to access the Internet or another remote network.**

 - a. True
 - b. False

- 7 EMI stands for**

 - a. Electromagnetic induction

- b. Electronic Indication
- c. Electromagnetic interference
- d. None of the above

8 _____ Layer represents data to the user, plus encoding and dialog control.

- a. Transport
- b. Datalink
- c. Physical
- d. Application

9 The physical address is known as the _____ address and is assigned to a NIC when it is manufactured.

- a. Media Access Control (MAC)
- b. Logical Address
- c. Subnet mask
- d. None of the above

10 What is the size of the IP version 4?

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

11 Bits are transmitted as signals over

- a. copper wire (electrical pulses),
- b. fiber- optic cable (light pulses),
- c. wireless (radio waves).
- d. All of the above

12 The logical IP addresses contain two parts: network portion and the _____ address

- a. Host
- b. Physical
- c. Subnet mask
- d. Both b and c

13 A _____ message is simultaneously sent by a host to all other hosts

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

- d. Somecast

14 ARP stands for

- a. address resolution protocol
- b. Address revolving protocol
- c. Admin resolve protocol
- d. None of the above

15 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

16 _____ is the process of identifying the best path to a destination.

- a. Switching
- b. Routing
- c. Connecting
- d. Roaming

17 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

18 _____ is a highly targeted phishing attack.

- a. Pharming
- b. Spear phishing
- c. Vishing
- d. Hash tagging

19 A VPN is a private network that connects remote sites or users together over a public network, like the Internet.

- a. True
- b. False

20 Asymmetric algorithms use pre-shared keys to encrypt and decrypt data, a method also known as private-key encryption.

- a. True
- b. False

21 _____ threats arise from individuals working outside of an organization

- a. Internal
- b. External
- c. Social
- d. None of the above

22 The _____ is the physical path over which a message travel

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

23 DoS stands for

- a. Denial of Service
- b. Damage on Service
- c. Denial of switch
- d. Damage on Switch

24 What type of communication is sent to a single designated host?

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

25 A _____ modifies the operating system to create a backdoor.

- a. Homekit
- b. Spykit
- c. Rootkit
- d. Toolkit

26 A _____ is a small piece of code that fixes a specific problem

- a. Portion
- b. Patch
- c. Pin
- d. Port

27 Which protocol is used for sending emails over the internet?

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

d. ICMP

28 ***Black hat* attackers break into networks or computer systems to discover weaknesses in order to improve the security of these systems.**

- a. True
- b. False

29 **Data has three possible states: 1) Data at rest or in storage 2) Data in transit 3) Data in process**

- a. True
- b. False

30 **Access control types include:**

- a. Role based
- b. Discretionary access control (DAS)
- c. Mandatory access control (MAC)
- d. All of the above

PART 2 (40 Marks) – Briefly answer ALL the following questions:

1 **Describe any two of the following: (10 Marks)**

- a) Backdoor and rootkit
- b) Ransomware
- c) Phishing

2 **Briefly explain the Transport of the OSI model and give two examples of equipment it defines? (5 Marks)**

3 **What are the differences between fibre optic cable and twisted pair cable? (8 Marks)**

4 **What are the two most important pieces of information a ping and ipconfig commands provide about the host and the network connection? (6 Marks)**

5 **Discuss the three states of data: Data at rest or in storage, data in transit and data in process. (6 Marks)**

6 **Describe two ways to defend against malicious attack on a wireless network. (5 Marks)**

All the best!