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Reg. No. : .....

**Code No. : 6475**

**Sub. Code : ZNTM 15**

M.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2022.

First Semester

Networking and Information Technology

**CRYPTOGRAPHY AND NETWORK SECURITY**

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An ————— attack attempts to alter system resources or affect their operation
  - (a) active
  - (b) passive
  - (c) thread
  - (d) virus

2. How many types of authentication services are defined in X.800?
- (a) Three                      (b) Two  
(c) Four                        (d) Six
3. An encryption algorithm that encrypts data with a \_\_\_\_\_ randomly generated symmetric key
- (a) 56-bit                        (b) 52-bit  
(c) 55-bit                        (d) 54-bit
4. \_\_\_\_\_ mode of operation provides message dependence for generating cipher text and makes the system non-deterministic
- (a) OFB                         (b) CBC  
(c) CRT                         (d) ECB
5. Which one of the following is not a public key distribution means?
- (a) Public-Key Certificates  
(b) Hashing Certificates  
(c) Publicly available directories  
(d) Public-Key authority

6. \_\_\_\_\_ is an authentication service developed as part of Project Athena at MIT
- (a) Internet Standard (b) TG server  
(c) Session Key (d) Kerberos
7. How many functional area IPsec encompasses?
- (a) Four (b) Five  
(c) Three (d) Six
8. The \_\_\_\_\_ is fundamentally a client/server application running over the Internet and TCP/IP intranets
- (a) FTP (b) World Wide Web  
(c) Internet (d) Ethernet
9. \_\_\_\_\_ individual who is not authorized to use the computer and who penetrates a systems access controls to exploit a legitimate users account
- (a) Masquerader (b) Misfeasor  
(c) Clandestine user (d) Intruder
10. \_\_\_\_\_ are decoy systems that are designed to lure a potential attacker away from critical systems
- (a) Host audit record (b) Host agent  
(c) LAN monitor agent (d) Honeypots

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Discuss the Concept of OSI Security Architecture.

Or

- (b) Define steganography Write the advantages and disadvantage of steganography.

12. (a) Explain the fundamental activities of location encryption devices.

Or

- (b) Write the applications of hash function based on its cryptographic properties.

13. (a) How to generate and format a public key certificate?

Or

- (b) Categorize the operational services provided by PGP.

14. (a) Mention the various application of IPSec.

Or

- (b) Examine the basic combinations of security association.

15. (a) Describe Intrusion techniques How to use this technique to learn password?

Or

- (b) Classify the different generation of antivirus software and advanced antivirus techniques.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain briefly about Security Attack and its types with an example.

Or

- (b) Determine the basic building block of all encryption technique.

17. (a) Summarize about Message Authentication process and its limitation.

Or

- (b) Write brief notes on the following
- (i) RSA Cryptosystem
  - (ii) Digital Signatures.

18. (a) Determine the concept of Kerberos requirements issues and its characteristics.

Or

- (b) Elucidate the various operations for generation of PGP message.

19. (a) Explain in detailed about various types of Secure Socket Layer Protocols.

Or

- (b) Describe web security considerations in detail. Compare the different threats on web.

20. (a) Demonstrate the firewall design principles and its characteristics.

Or

- (b) Summarize the taxonomy of malicious program. Write the nature and different phases of Virus.
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Reg. No. : .....

**Code No. : 6478**

**Sub. Code : ZNTM 33**

M.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2022.

Third Semester

Network and Information Technology — Core

NETWORK ADMINISTRATION

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Encryption system is?
  - (a) Symmetric key encryption algorithm
  - (b) Not an encryption algorithm
  - (c) Asymmetric key encryption algorithm
  - (d) None of the above
  
2. Which one is DES?
  - (a) Stream cipher
  - (b) Bit cipher
  - (c) Block cipher
  - (d) None of the above

3. Which of the following is a type of independent malicious program that never required any host program?
- (a) Trojan Horse            (b) Worm  
(c) Trap door                (d) Virus
4. In computer world, Trojan refer to
- (a) Virus                      (b) Malware  
(c) Worm                      (d) Spyware
5. Which of the following statements is correct about the firewall?
- (a) It is a device installed at the boundary of a company to prevent unauthorized physical access
- (b) It is a device installed at the boundary of an incorporate to protect it against the unauthorized access
- (c) It is a kind of wall built to prevent files form damaging the corporate
- (d) None of the above
6. A digital signature is a mathematical technique which validates?
- (a) Integrity                (b) Non-repudiation  
(c) Authenticity            (d) All of the above



7. The purpose of backup is
  - (a) To restore a computer to an operational state following a disaster
  - (b) To restore small numbers of files after they have been accidentally deleted
  - (c) To restore one among many version of the same file for multiple backup environment
  - (d) All of the mentioned
  
8. In which topology do all the computers connect with the help of a hub?
  - (a) Star
  - (b) Bus
  - (c) Ring
  - (d) Mesh
  
9. On Linux, initrd is a file
  - (a) Containing root file-system required during bootup
  - (b) Contains only scripts to be executed during bootup
  - (c) Contains root-file system and drivers required to be preloaded during bootup
  - (d) None of the mentioned
  
10. \_\_\_\_\_ is a Linux "desktop environment".
  - (a) XFCE
  - (b) Gnome
  - (c) KDE
  - (d) All of these

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) What is the role of compression function in has function?

Or

- (b) Specify the benefits of IP Sec.

12. (a) what is Trojan? Explain with example.

Or

- (b) Write about virus scanners in detail.

13. (a) What are the major components of intrusion detection system?

Or

- (b) Write in detail on Teardrop attack.

14. (a) Write on the different types of computer network topologies.

Or

- (b) What is clustering for disaster recovery? Explain.

15. (a) What are the Linux installation requirements?

Or

- (b) What are some important administrative tasks that a Linux system administrator must perform?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) What is cryptography? Explain various symmetric and asymmetric cryptographic methods.

Or

- (b) Write on MD5 in detail.

17. (a) Discuss on computer virus strategies and detection methods.

Or

- (b) Write on the different types of virus in detail. Suggest scenarios for deploying these types in network scenario.

18. (a) Write a detailed note on digital signatures.

Or

- (b) Explain the technical details of firewall and describe any three types of firewall with neat diagram.

19. (a) Discuss the types of disasters in network security.

Or

- (b) Write in detail on network disaster recovery plan.

20. (a) Write in detail on the important files and file handling utilities in Linux.

Or

- (b) What is package management in Linux? Write on the two major Linux package management system.
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