

SAMPLE PAPERS**DIPLOMA FIFTH SEMESTER EXAMINATION 2025 (JUT)****CYBER SECURITY****DIPLOMA WALLAH**[CLICK HERE TO VISIT DIPLOMA WALLAH WEBSITE](#) (MADE WITH ❤ BY SANGAM)

Full Marks: 70 marks | Time: 3 Hours

Instructions:

- Question No. 1 is compulsory.
- Answer any **FOUR** questions from the remaining (Q.2 to Q. 7 marks).

Q.1 Multiple Choice Questions (Compulsory)*(7 Questions × 2 Marks = 14 Marks)*

(i) What describes a system where a user cannot deny having performed a specific action?

- (a) Authorization
- (b) Non-repudiation
- (c) Snooping
- (d) Masquerading

(ii) Which tool is commonly used for network scanning and discovery?

- (a) Photoshop
- (b) NMAP
- (c) Word
- (d) Calculator

(iii) In the context of Linux permissions, what is the numerical value for 'Read' permission?

- (a) 1
- (b) 2
- (c) 4
- (d) 7

(iv) Which of the following is considered a 'Strong' password?

- (a) admin123
- (b) password
- (c) P@\$\$word#2024

(d) 12345678

(v) Which protocol is used for secure file transfer?

- FTP
- SFTP
- TFTP
- HTTP

(vi) The process of hiding data within another file (like an image) is called:

- Cryptography
- Steganography
- Tomography
- Biometrics

(vii) Which OWASP Top 10 vulnerability involves inserting malicious database queries into input fields?

- Broken Access Control
- SQL Injection
- Security Misconfiguration
- Insecure Design

Q.2

(A) Differentiate between Vulnerability, Threat, and Risk. Give one example of each to support your answer. [7 Marks]

(B) What is Social Engineering? Briefly explain Phishing, Pretexting, and Tailgating with examples. [7 Marks]

Q.3

(A) Write a detailed note on Digital Signatures. How do they ensure non-repudiation and integrity? [7 Marks]

(B) Explain Data Classification. What is the difference between Unclassified, Restricted, Confidential, and Top Secret data? [7 Marks]

Q.4

(A) What is a VPN (Virtual Private Network)? How does IPSec help in securing data over a network? [7 Marks]

(B) Briefly explain the RSA Algorithm and how Asymmetric encryption works. [7 Marks]

Q.5

(A) Explain DoS (Denial of Service) vs. DDoS (Distributed Denial of Service) attacks. [7 Marks]

(B) What is Hashing? How is SHA-256 different from Encryption? Explain the concept of One-way vs Two-way. [7 Marks]

Q.6

(A) Write notes on Password Attacks: Brute Force Attack, Dictionary Attack, and Rainbow Table Attack. [7 Marks]

(B) Explain the concept of Two-Factor Authentication (2FA) and Multi-Factor Authentication (MFA). [7 Marks]

Q.7 Write Short Notes on (Any FOUR): [4 × 3.5 = 14 Marks]

(A) Ransomware (Symptoms & working)

(B) Spyware & Rootkits

(C) User Account Control (UAC)

(D) OWASP Top 10

(E) System Hardening



SOLUTIONS - PAPER 2

MCQ Answer Key:

- (i) (b) Non-repudiation 15
- (ii) (b) NMAP 1616
- (iii) (c) 4 1717
- (iv) (c) P@\$\$word#2024 1818
- (v) (b) SFTP 1919
- (vi) (b) Steganography 20
- (vii) (b) SQL Injection 2121

Short Answer Hints:

- **Q.2(A) Vuln/Threat/Risk:** Vulnerability = Weakness. Threat = Potential harm. Risk = Probability x Impact.
- **Q.2(B) Social Engineering:** Manipulating people. Phishing (Fake links), Tailgating (Following someone into secure area).
- **Q.3(A) Digital Signatures:** Uses private key to sign, public to verify. Ensures sender identity.
- **Q.4(A) VPN:** Extends private network across public network. IPSec provides encryption/auth for IP packets.
- **Q.5(B) Hashing:** One-way function (cannot decrypt). Used for integrity (check sums).
- **Q.6(A) Password Attacks:** Brute Force (Try all combos), Dictionary (Wordlist), Rainbow (Precomputed hashes).