



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

| WINTER-2025   |                        |
|---|------------------------|
| Exam Seat No.:  |                        |
| Academic Year:2025-2026   | Semester:III           |
| Class:SYMCA   | Program:MCA            |
| Branch Code:M.C.A.  | Pattern:2022           |
| Name of Course:Elective II: A: Information and Network Security | Course Code:MCA223004A |
| Max. Marks:60   | Duration:2.30 Hrs.     |

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains \_\_TWO\_\_ page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Marks CO**

**Question No. 1**

- 1a) Describe Operational model and explain their types with neat diagram (6) CO1

**Question No. 2**

- 2a) Solve Following Using Substitution Techniques. (6marks) (6) CO2

a) Plain Text: meet me tomorrow

Find Cipher Text? (Solve using Caesar cipher)

b) Plain Text: HELLO

Key: NETWORK

Find Cipher Text? (Solve using Play fair cipher)

c) Plain Text: This Message is Easy to Encrypt

Find Cipher Text? (Solve using Mono-alphabetic Cipher.)

**Question No. 3**

- 3a) How would you implement mobile device security by utilizing the key elements of mobile device security? (8) CO3

**OR**

- 3b) Relate the following Extensible Authentication Protocols with their similarities. (8) CO3

1. EAP - TLS

2. EAP - TTLS

3. EAP - IKEV2

4. EAP - GSK

3c) Compare the key threats of wireless network security and its Measures. (8) CO3

**OR**

3d) How would you implement the encapsulating Security Payload (ESP)? List its advantages and disadvantages. (8) CO3

**Question No. 4**

4a) Organize the features of Pretty Good Privacy (PGP) and discuss its effectiveness in securing email communications. (8) CO4

**OR**

4b) Examine the effectiveness of Transport Layer Security (TLS) in ensuring secure data transmission. (8) CO4

4c) Relate the working of DomainKeys Identified Mail (DKIM) and illustrate its mechanisms with a diagram. (8) CO4

**OR**

4d) Test the effectiveness of Secure Socket Shell (SSH) in providing secure remote access. (8) CO4

**Question No. 5**

5a) Assess the impact of phishing on cyber security and explain the different types of phishing attacks. (8) CO5

**OR**

5b) Judge the different types of worms and Explain worms in detail. (8) CO5

5c) Appraise the role of spyware in cybersecurity. Additionally, compare and contrast adware and ransomware, highlighting their differences, impacts, and mitigation strategies. (8) CO5

**OR**

5d) How would you assess the different types of computer viruses by providing suitable examples for each, along with their impact on computer systems? (8) CO5

..... End of question paper.....