# K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

| WINTER-2025 | |
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| Exam Seat No.: | |
| Academic Year:2025-2026 | Semester:II |
| Class:PG-I | Program:MCA |
| Branch Code:M.C.A. | Pattern:2024 |
| Name of Course:Cyber Security | Course Code:2409515A |
| 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 __2__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) | Explain the basic components and elements of Information Security with reference to Confidentiality, Integrity, and Availability. | (6) | CO1 |
| **Question No. 2** | | | |
| 2a) | Explain encryption methods and standards with reference to symmetric and asymmetric encryption, DES, and AES. | (6) | CO3 |
| **Question No. 3** | | | |
| 3a) | Interpret the concept of risk management in information security with reference to risk identification, assessment, and control strategies. | (8) | CO4 |
| | **OR** | | |
| 3b) | Compare qualitative and quantitative risk assessment practices used in information security | (8) | CO4 |
| 3c) | Interpret laws and ethics in information security with reference to cybercrime and legal perspectives in India and globally. | (8) | CO4 |
| | **OR** | | |
| 3d) | Summarize social engineering attacks, cyber stalking, and cloud computing related cybercrimes. | (8) | CO4 |
| **Question No. 4** | | | |
| 4a) | Classify Public Key Infrastructure (PKI) and X.509 digital certificates used for secure communication. | (8) | CO5 |
| | **OR** | | |
| 4b) | Summarize the Needham–Schroeder authentication algorithm and Kerberos authentication system. | (8) | CO5 |
| 4c) | Summarize IP Security (IPSec) with reference to IPv6 and its security services. | (8) | CO5 |
| | **OR** | | |
| 4d) | Summarize secure communication mechanisms used in web and mail security such as SSL/HTTPS, PGP, and S/MIME. | (8) | CO5 |

**Question No. 5**

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|---|---|---|---|
| 5a) | Describe phishing and password cracking attacks along with their preventive measures. | (8) | CO2 |

**OR**

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|---|---|---|---|
| 5b) | Explain different types of malwares such as viruses, worms, spyware, adware, and ransomware. | (8) | CO2 |
| 5c) | Explain DoS and DDoS attacks, SQL injection, and buffer overflow attacks. | (8) | CO2 |

**OR**

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|---|---|---|---|
| 5d) | Describe antivirus software, Intrusion Detection Systems (IDS), and Intrusion Prevention Systems (IPS). | (8) | CO2 |

**····· End of question paper·····**