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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech

SEM: II - THEORY EXAMINATION (2022-2023)

Subject: Information Security

Time: 3 Hours

Max. Marks: 70

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION A

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1. Attempt all parts:-

- | | | |
|------|---|---|
| 1-a. | What is the purpose of a security audit in information security. (CO1) | 1 |
| | (a) To assess the effectiveness of security controls and identify areas for improvement | |
| | (b) To create security policies and procedures | |
| | (c) To implement security controls | |
| | (d) To conduct security training for employees | |
| 1-b. | Data Security considerations include - (CO2) | 1 |
| | (a) Backups | |
| | (b) Archival of data | |
| | (c) all | |
| | (d) Disposal of data | |
| 1-c. | Types of biometric include - (CO3) | 1 |
| | (a) Facial recognition | |
| | (b) All | |

- (c) Retina
 - (d) Fingerprint
- 1-d. Which of the following is an example of a denial-of-service attack. (CO4) 1
- (a) Installing malware on a computer
 - (b) Phishing for sensitive information
 - (c) Launching a distributed denial-of-service (DDoS) attack
 - (d) Breaking into a physical building
- 1-e. Which section of the Information Technology Act, 2000 deals with the punishment for unauthorized access to a computer system? (CO5) 1
- (a) Section 65
 - (b) Section 42
 - (c) Section 66
 - (d) Section 69

2. Attempt all parts:-

- 2.a. Define information system. (CO1) 2
- 2.b. Describe a virtual private network (VPN) and mention its types. (CO2) 2
- 2.c. Mention the advantages and disadvantages of using biometric authentication for security purposes. (CO3) 2
- 2.d. Explain Intrusion detection system. (CO4) 2
- 2.e. Mention how often is ISO certification required to be renewed. (CO5) 2

SECTION B

20

3. Answer any five of the following:-

- 3-a. Describe the threats to information systems. (CO1) 4
- 3-b. Explain the term Information assurance. (CO1) 4
- 3-c. Explain electronic payment system and its benefits. (CO2) 4
- 3-d. Explain the importance of regular antivirus scans and malware detection in protecting against trojans. (CO2) 4
- 3.e. Analyze the risks and benefits of implementing biometric systems in terms of scalability and ease of deployment across various user population. (CO3) 4
- 3.f. Explain data storage and security in downloadable devices. (CO4) 4
- 3.g. Mention some challenges that organizations may face during the policy review process. (CO5) 4

SECTION C

35

4. Answer any one of the following:-

- 4-a. Explain the three main objectives of information security. (CO1) 7
- 4-b. Describe cyber security and the role of ethical hackers. (CO1) 7

5. Answer any one of the following:-

- 5-a. Explain the difference between signature-based and anomaly-based intrusion detection techniques. Discuss their respective advantages and disadvantages. (CO2) 7
- 5-b. Discuss the methods used to distinguish trojans. Explain the potential risks associated with trojans and how they can compromise the system security and privacy. (CO2) 7

6. Answer any one of the following:-

- 6-a. Explain the potential risks and implications of a biometric system's database being breached and how can such risks be mitigated. (CO3) 7
- 6-b. Discuss the potential risks associated with wireless communication capabilities, such as Bluetooth or Wi-Fi, and the importance of implementing secure protocols and encryption for data transmission. (CO3) 7

7. Answer any one of the following:-

- 7-a. Explain the important parameters to be taken care while developing a secure information system. (CO4) 7
- 7-b. Describe what do you understand by backup security measures. (CO4) 7

8. Answer any one of the following:-

- 8-a. Explain the key steps involved in the policy review process. (CO5) 7
- 8-b. Explain IT Act and Copyright Act. Also mention the need of making such acts. (CO5) 7