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Subject Code:- AMTCY0216

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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 (20..... - 20.....)

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

15

1. Attempt all parts:-

- 1-a. Select, which of the following is a requirement for an invention to be eligible for a patent? (CO1,K2) 1
- (a) The invention must be novel and non-obvious
 - (b) The invention must be commercially successful
 - (c) The invention must be in the field of medicine or technology
 - (d) The invention must be published in a scientific journal
- 1-b. Identification of the corporate policy that sets guidelines and standards for employee behavior and conduct.(CO2,K2) 1
- (a) Human Resources Policy
 - (b) Financial Policy
 - (c) Code of Conduct Policy
 - (d) Information Security Policy
- 1-c. Preventing spoofing attacks on facial recognition systems requires. (CO3,K2) 1
- (a) Low-resolution cameras
 - (b) Password authentication
 - (c) Liveness detection techniques
 - (d) Manual checklists
- 1-d. Recognize the first phase in the risk management lifecycle.(CO4,K1) 1
- (a) Risk Mitigation

- (b) Risk Avoidance
 - (c) Risk Identification
 - (d) Risk Monitoring
- 1-e. Interpret the role of policy publishing in an organization. (CO5,K2) 1
- (a) Improve office layout
 - (b) Reduce electricity usage
 - (c) Enable product branding
 - (d) Facilitate employee awareness

2. Attempt all parts:-

- 2.a. List down the three main objectives of information security.(CO1,K2) 2
- 2.b. Name one common method to protect against SQL injection attacks.(CO2,K1) 2
- 2.c. Provide the definition of disaster recovery.(CO3,K2) 2
- 2.d. Define Intrusion detection system.(CO4,K2) 2
- 2.e. Summarize the role of cyber laws in India.(CO5,K2) 2

SECTION-B

20

3. Answer any five of the following:-

- 3-a. Describe a zero-day vulnerability and how can organizations protect against it?(CO1,K2) 4
- 3-b. Describe a Secure File Transfer Protocol (SFTP) and how does it protect data.(CO1,K2) 4
- 3-c. Explain digital signature in detail.(CO2,K2) 4
- 3-d. What are the main components of an Intrusion Detection System (IDS)? (CO2,K2) 4
- 3.e. Present an overview of commonly used biometric traits and categorize them into physiological and behavioral types.(CO3,K2) 4
- 3.f. Enumerate various backup methods and describe how each helps in securing data.(CO4,K2) 4
- 3.g. Describe the impact of email security policies on preventing internal and external cyber threats.(CO5,K3) 4

SECTION-C

35

4. Answer any one of the following:-

- 4-a. Explain the term social engineering and how can it be prevented.(CO1,K2) 7
- 4-b. Describe cyber security and the role of ethical hackers.(CO1,K2) 7

5. Answer any one of the following:-

- 5-a. Describe the challenges faced in detecting and responding to emerging email viruses and macro viruses. (CO2,K3) 7
- 5-b. Compare and contrast email viruses and macro viruses in terms of their behavior, propagation methods, and impact on computer systems. (CO2,K3) 7

6. Answer any one of the following:-

- 6-a. Construct a full security strategy for a medium-sized enterprise, incorporating physical security controls, disaster management plans, biometric access control, and surveillance systems. Justify the selection of technologies based on the operational requirements. (CO3,K6) 7
- 6-b. Discuss in depth the legal, ethical, and social implications associated with the deployment of biometric authentication systems in both public and private sectors. Include examples from real-world implementations. (CO3,K5) 7
7. Answer any one of the following:-
- 7-a. List all types of data backup strategies and provide an in-depth explanation of how each type supports organizational continuity during different disaster scenarios. (CO4,K2) 7
- 7-b. Interpret the impact of emerging security issues in hardware, portable storage devices, and downloadable tools by discussing their vulnerability surface and risk potential within mobile computing environments.(CO4,K2) 7
8. Answer any one of the following:-
- 8-a. Discuss the importance of web and email security policies by providing real-world examples that illustrate the consequences of their absence or poor implementation. (CO5,K2) 7
- 8-b. Apply the principles of corporate information security to design a comprehensive sample policy framework that includes sections on acceptable web usage, email practices, and physical data access.(CO5,K3) 7