Printed Page:-03 **Subject Code:- ANC0301**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: III - THEORY EXAMINATION - (2024 - 2025)

Subject: Cyber Security

Time: 2 Hours **Max. Marks: 50**

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. Identify which one is malware (CO1,K1) 1

(a) Antivirus
(b) spyware
(c) firewall
(d) VPN

1-b. Select the activity that occurs due to malware in Cloud Services. (CO2,K1) 1

(a) Trojans
(b) Worms
(c) Macro Viruses
(d) Data Exfiltration

1-c. _____ is an issue faced by data storage devices. (CO3,K1) 1

(a) Excessive data mounting
(b) Theft,destruction and damage
(c) Too small size
(d) All of the above

1-d. Advanced encryption standard (AES) is an encryption technique of_____ type (CO4,K2) 1

(a) Systematic
(b) Symmetric

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(c) Asymmetric

(d) None

1-e. The type of Intellectual Property is _____. (CO5,K1) 1

(a) Copyright

(b) Government property

(c) Personal privacy

(d) All the above

2. Attempt all parts:-

2.a. Discuss the potential impact of this Zero-Day Attack in a popular messaging application.(CO1,K2) 2

2.b. Describe how the IDS would help in identifying and mitigating the threat. (CO2,K2) 2

2.c. Explain the principles for secure system design. (CO3,K2) 2

2.d. Summarize how various security mechanisms could help mitigate the risk. (CO4,K2) 2

2.e. Explain tangible property with suitable example. (CO5,K2) 2

SECTION-B 15

3. Answer any three of the following:-

3-a. Discuss in the stages of Spiral model. Determine how security is applied in each stage. (CO1,K3) 5

3-b. Enlist advantages and disadvantages of E-commerce. (CO2,K2) 5

3.c. Explain the term Application Security. Determine which protocols are used for Email Security. (CO3,K3) 5

3.d. Suppose a company wants to securely transmit sensitive customer information (like credit card details) over the internet. Determine the encryption method used for this. (CO4,K3) 5

3.e. Discuss review and approval stages of policy development with example. (CO5,K2) 5

SECTION-C 20

4. Answer any one of the following:-

4-a. A popular e-commerce website experiences a sudden slowdown in service, with users being unable to make purchases. Determine the problem and discuss how the website's security team should respond to mitigate the effects (CO1,K3) 4

4-b. A financial institution experiences a breach involving data leakage, corrupted transactions, and website downtime. Examine how can they address these issues using the CIA Triad? (CO1,K4) 4

5. Answer any one of the following:-

5-a. Propose Rule Based Access Control rules for E- Commerce company having departments like Sales, Marketing, Customer Support, and Finance. Explain its 4

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advantages, and discuss its applicability.(CO2,K3)

5-b.	Explain Network layer firewall in detail. (CO2,K2)	4

6. Answer any <u>one</u> of the following:-

6-a.	Discuss concise steps a Tech firm should teach employees to secure mobile devices and company data, after one of the employee lost his unprotected mobile phone. Explain why briefly.(CO3,K2)	4
6-b.	Elaborate various security issues related to the development of an application. (CO3,K2)	4

7. Answer any <u>one</u> of the following:-

7-a.	Explain Public-key Distribution in detail. (CO4,K2)	4
7-b.	Assuming a company X, employs standard digital signature technology, what critical flaw in their implementation or a lapse in user practice could lead to a situation where alteration *after* a valid digital signature might be claimed with some plausibility? Justify your answer. (CO4,K4)	4

8. Answer any <u>one</u> of the following:-

8-a.	Based on your understanding of email security, describe two practical methods you would use to protect your email messages. Illustrate with example of how you would apply it in your daily communication.(CO5,K3)	4
8-b.	Explain the recent trends in security in cloud. (CO5,K2)	4

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