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Subject Code:- ACSBS0603

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**NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**

**(An Autonomous Institute Affiliated to AKTU, Lucknow)**

**B.Tech**

**SEM: VI - THEORY EXAMINATION (2022-2023 )**

**Subject: Information Security**

**Time: 3 Hours**

**Max. Marks: 100**

**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**

**20**

**1. Attempt all parts:-**

- 1-a. \_\_\_\_\_ of information means, only authorized users are capable of accessing the information. [CO1] 1
- (a) Confidentiality
- (b) Integrity
- (c) Non-repudiation
- (d) Availability
- 1-b. Criminals are constantly surveying the environment for an opportunity to commit crimes. [CO1] 1
- (a) TRUE
- (b) FALSE
- (c) None
- (d) Can't say
- 1-c. In general how many key elements constitute the entire security structure? [CO2] 1
- (a) 1

- (b) 2
- (c) 3
- (d) 4
- 1-d. Which of these is not a proper method of maintaining confidentiality? [CO2] 1
- (a) Biometric verification
- (b) ID and password based verification
- (c) 2-factor authentication
- (d) switching off the phone
- 1-e. \_\_\_\_\_ affects the function of the server in 2 ways Goal of service provider. [CO3] 1
- (a) None of These
- (b) Host
- (c) Services
- (d) Access control
- 1-f. \_\_\_\_\_ techniques and policies make sure user are who they say they are and that they are proper access to data. [CO3] 1
- (a) Authentication
- (b) Access control
- (c) Authorization
- (d) All of the above
- 1-g. A/An \_\_\_\_\_ is a piece of software or a segment of command that usually take advantage of a bug to cause unintended actions and behaviors. [CO4] 1
- (a) Malware
- (b) Trojan
- (c) Worms
- (d) Exploit
- 1-h. Some audit and control procedures in a system [CO4] 1
- (i) Detect and correct errors in programs
- (ii) Selectively print records in a system which meets certain criteria
- (iii) Examine credit and debit balances in an accounting system and check if they balance
- (iv) Provide a facility to trace a variable value through processing steps and print

intermediate values when required

- (a) i and ii
- (b) ii and iii
- (c) i, ii, iii
- (d) ii, iii, iv

- 1-i. Which of the following is considered as the unsolicited commercial email? [CO5] 1
- (a) Virus
  - (b) Malware
  - (c) Spam
  - (d) All of the above
- 1-j. \_\_\_\_\_ is the practice and precautions taken to protect valuable information from unauthorized access, recording, disclosure or destruction. [CO5] 1
- (a) Network Security
  - (b) Database Security
  - (c) Information Security
  - (d) Physical Security

**2. Attempt all parts:-**

- 2.a. Explain Major elements of Information security . [CO1] 2
- 2.b. Why is a methodology important in implementing the information security? [CO2] 2
- 2.c. Define authentication. [CO3] 2
- 2.d. Define behavioral audit. [CO4] 2
- 2.e. what is database auditing? [CO5] 2

**SECTION B**

**30**

**3. Answer any five of the following:-**

- 3-a. Name the different types of network topologies and brief their advantages? [CO1] 6
- 3-b. In how many ways the data is represented and what are they? Explain in detail. [CO1] 6
- 3-c. Explain computer virus? [CO2] 6
- 3-d. Explain the main goal of Information Security? [CO2] 6
- 3.e. Explain Control of access and information flow. [CO3] 6
- 3.f. Explain protocol-based IDS. [CO4] 6

3.g. What are the common Threats and Challenges in Database Security? [CO5] 6

### SECTION C

50

#### 4. Answer any one of the following:-

4-a. What is IP address? What are the different classes of IP addresses and give the range of each class? [CO1] 10

4-b. Explain the history of the CIA triad in detail. [CO1] 10

#### 5. Answer any one of the following:-

5-a. What are the important differences between MAC address and IP address discuss in detail. [CO2] 10

5-b. Explain temporal and spatial-temporal models. [CO2] 10

#### 6. Answer any one of the following:-

6-a. Describe modularity. [CO3] 10

6-b. Describe decentralization with one detailed example. [CO3] 10

#### 7. Answer any one of the following:-

7-a. Why is data privacy important, describe in detail? Give one case study. [CO4] 10

7-b. Describe technologies used for data privacy. How each technology is used to achieve data privacy? [CO4] 10

#### 8. Answer any one of the following:-

8-a. How do you ensure that your security architecture is aligned with your business goals? [CO5] 10

8-b. Explain the different types of database attacks? [CO5] 10