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Sub Code:KNC301

Paper Id:

Roll No.

**B.TECH.**  
**(SEM III) THEORY EXAMINATION 2022-23**  
**COMPUTER SYSTEM SECURITY**

*Time: 3 Hours*

*Total Marks: 50*

**Note:**

1. Attempt all Sections. If require any missing data; then choose suitably.

###

**SECTION A**

**1. Attempt all questions in brief.**

**1 x 10 = 10**

Qno.

Question

- a. What is computer security? Discuss confidentiality and integrity.
- b. What is Ransomware?
- c. What is the use of frame busting in web security?
- d. Differentiate between encryption and decryption in cryptography.
- e. Discuss software fault isolation.
- f. What is use of kernel in Unix operating system?
- g. Define hash function. What is the use of hash function?
- h. What is the main difference between virus and worm?
- i. What is SQL injection attack ? Explain in brief.
- j. What is difference between Cache Memory and RAM ?

**SECTION B**

**2. Attempt any three of the following:**

**5x3=15**

- a. What is control hijacking? Discuss the various types of hijacking attacks in detail.
- b. What is system call interposition? Explain *ptrace* and *systrace* in detail.
- c. Discuss browser isolation and remote browser isolation in detail.
- d. Explain RSA algorithm with the help of suitably chosen example.
- e. What is an Intrusion Detection System (IDS)? Discuss the various approaches adopted in developing IDS system.

### SECTION C

3. **Attempt any *one* part of the following:** **5x1=5**
- a. Describe various types of security threats in detail.
  - b. Explain the different types of defenses used against control hijacking.
4. **Attempt any *one* part of the following:** **5x1=5**
- a. Define confinement principle. Discuss the approaches of confinement at different levels.
  - b. What are Rootkits? Discuss the various types of Rootkits in detail.
5. **Attempt any *one* part of the following:** **5x1=5**
- a. What is cross site request forgery? Explain the concept with suitable examples.
  - b. Discuss the defenses and protection against cross site scripting.
6. **Attempt any *one* part of the following:** **5x1=5**
- a. Describe Symmetric key and Asymmetric key Cryptography with due emphasis on the difference between them.
  - b. What is digital signature? Discuss the various steps used in creating digital signature.
7. **Attempt any *one* part of the following:** **5x1=5**
- a. What is firewall? Explain packet filtering firewall in detail.
  - b. Write short note on the following:
    - (i) DNS security
    - (ii) Routing security