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Question Paper Code WU24VII-421



## WALCHAND INSTITUTE OF TECHNOLOGY, SOLAPUR

An Autonomous Institute affiliated to PAH Solapur University, Solapur

### Information Technology Final Year B. Tech. Sem-VII 2024-25(CBCS pattern) End Semester Examination

Course: CYBER SECURITY

Max. Marks: 60

SET:S

Course Code: 21ITU7CC1T

Day and Date: Monday 25/11/2024

Time: 02:30 pm to 5:30 pm

#### Instructions:

1. All questions are compulsory.
2. Assume suitable data wherever necessary.
3. Draw neat sketches wherever necessary.
4. Q.1 should be solved in first 30 minutes and answers should be written only on the first page of answer book.
5. Supplements will not be provided.
6. Use of nonprogrammable calculator is permitted.

| Q. No | Sub Que   | Marks |
|-------|---|-------|
| 1     | Multiple Choice Questions   | 12    |
|       | i. Which of the following terms best describes an individual who uses digital technology to exploit or steal information?<br>A) White-hat hacker<br>B) Cybercriminal<br>C) Security Analyst<br>D) Forensic Expert                   |       |
|       | ii. Which of the following is NOT considered a security attack?<br>A) Interruption<br>B) Interception<br>C) Encryption<br>D) Fabrication  |       |
|       | iii. Which type of attack involves exploiting vulnerabilities in mobile applications to gain unauthorized access to sensitive data?<br>A) Phishing<br>B) Mobile application malware<br>C) SQL Injection<br>D) Buffer Overflow       |       |
|       | iv. Which amendment to the Indian IT Act was introduced to address issues like cyber terrorism and data protection?<br>A) IT Act Amendment 2000<br>B) IT Act Amendment 2008<br>C) IT Act Amendment 2015<br>D) IT Act Amendment 2020 |       |

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|  | v.    | What is the primary purpose of a phishing attack?<br>A) To protect a user's identity online<br>B) To create an encrypted password<br>C) To trick individuals into revealing sensitive information<br>D) To perform software updates  |  |
|  | vi.   | Which of the following best describes an attack that targets mobile devices by sending malicious links through SMS or instant messaging?<br>A) Vishing<br>B) Smishing<br>C) Pharming<br>D) Whaling   |  |
|  | vii.  | Which security service ensures that the sender of a message cannot deny having sent the message?<br>A) Confidentiality<br>B) Integrity<br>C) Authentication<br>D) Non-repudiation  |  |
|  | viii. | Which term describes the method or pathway used by cybercriminals to infiltrate a system?<br>A) Social engineering<br>B) Attack vector<br>C) Cyber Stalking<br>D) Cyber defense  |  |
|  | ix.   | Which classification of cybercrime involves manipulating individuals to gain access to confidential information?<br>A) Phishing<br>B) Malware attack<br>C) Social engineering<br>D) Denial-of-service attack   |  |
|  | x.    | What is SQL Injection primarily used for in cybercrime?<br>A) To steal data from databases by inserting malicious SQL queries<br>B) To mask the identity of the attacker<br>C) To damage physical hardware<br>D) To create a backup of the database  |  |
|  | xi.   | Which of the following is a technique where text is hidden within an image or audio file?<br>A) Steganography<br>B) Transposition<br>C) Substitution<br>D) Hashing   |  |
|  | xii.  | How does cloud computing pose potential risks for cyber offenses?<br>A) It increases hardware storage capacity<br>B) It centralizes data, making it an attractive target for attackers<br>C) It allows offline access to sensitive information<br>D) It restricts access to data on personal devices |  |

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| Q.2   | <b>Attempt any Four</b>  | 12    |
|       | i. Differentiate Substitution techniques and transposition techniques.   |       |
|       | ii. Using the Caesar Cipher with a shift of 4, decode the given ciphertext to reveal the original plaintext message. Ciphertext: "DVMXIQIRX" |       |
|       | iii. Explain the model for network security and illustrate it with a diagram.  |       |
|       | iv. Define a replay attack and explain how it works, using a diagram to illustrate the process.  |       |
|       | v. Describe Symmetric Cipher Model.  |       |
| Q.3   | <b>Attempt any Two</b>   | 12    |
|       | i. How do viruses get disseminated? Explain with diagram.  |       |
|       | ii. Discuss the concept of social cyber stalking. What are its potential consequences for victims?   |       |
|       | iii. Define botnets and their role in facilitating cybercrime. How do they contribute to the scale and impact of cyber offenses?             |       |

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| Q.4  | Attempt any Four   | 12 |
| i.   | What are proxy servers and anonymizers, and how do they assist cybercriminals in maintaining anonymity on the internet?  |    |
| ii.  | Differentiate Trojan Horses and Backdoors.   |    |
| iii. | What are common attack vectors, and how can organizations secure their wireless communications.  |    |
| iv.  | What are the various forms of phishing attacks, and what steps can individuals take to protect themselves from such threats?   |    |
| v.   | Identify and explain three common types of cyber-attacks targeting mobile phones. What precautions can users take to protect their devices from these attacks?             |    |
| Q.5  | Attempt any Two  | 12 |
| i.   | Describe Cyber Bullying .How does the Indian legal framework address cyber bullying and harassment? Discuss the relevant sections of the IT Act and other applicable laws. |    |
| ii.  | Discuss Section 66 of the IT Act, which addresses hacking and other cyber offenses. How does the law define hacking, and what penalties are prescribed?                    |    |
| iii. | Describe the significance of Section 67 of the IT Act. What are the legal implications for individuals or entities involved in such activities?                            |    |