

B.Tech DEGREE EXAMINATION, DECEMBER 2023

Fifth Semester

18ECE353T - CYBER SECURITY

(For the candidates admitted during the academic year 2020 - 2021 & 2021 - 2022)

Note:

- i. **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
- ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours

Max. Marks: 100

PART - A (20 × 1 = 20 Marks)

Answer all Questions

		Marks	BL	CO
1. ----- records all the keystroke	(A) Keyhijacking (C) Keylogging	(B) Keyjacking (D) Keyboard monitoring	1	1
2. ----- cannot be detected by anti-malware or anti-virus programs as it is programmed in a skilled way	(A) Malware (C) Keyloggers	(B) Remote Access Trojans (D) spyware	1	3
3. Passive attack is also known as -----	(A) Masquerade attack (C) Foot printing	(B) Active attack (D) Reply attack	1	2
4. Personally identifiable information is also known as -----	(A) Sensitive personal information (C) Personal information	(B) Anonymous information (D) Identity information	1	4
5. Black hat hackers -----	(A) Steal data for fun (C) Steals facebook account	(B) Steal credit card and bank information (D) Steals money	1	1
6. What is TOR?	(A) A software for secure and private web browsing. (C) A type of encryption algorithm.	(B) A network protocol used for file sharing (D) A hardware device used for network routing.	1	3
7. How does TOR provide anonymity to its users?	(A) By encrypting all data transmitted through the network. (C) By assigning a unique IP address to each user.	(B) By routing internet traffic through a series of volunteer-operated nodes. (D) By blocking all incoming connections to the user's device	1	2
8. What is the main drawback of using TOR for web browsing?	(A) Slow internet connection speed (C) Lack of availability on mobile devices	(B) Incompatibility with popular web browsers (D) Vulnerability to malware and hacking attacks.	1	4

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|-----|---|---|---|---|
| 9. | What is the main benefit of using TOR for secure web browsing? | 1 | 1 | 3 |
| | (A) Protection against hackers and surveillance | | | |
| | (B) Access to region-restricted content. | | | |
| | (C) Faster internet connection speed. | | | |
| | (D) Compatibility with all web browsers. | | | |
| 10. | Which of the following activities is NOT typically recommended while using TOR? | 1 | 3 | 3 |
| | (A) Downloading files from the internet. | | | |
| | (B) Streaming high-definition videos. | | | |
| | (C) Accessing social media websites. | | | |
| | (D) Online banking and financial transactions | | | |
| 11. | What is the primary purpose of cryptographic hash functions? | 1 | 2 | 3 |
| | (A) Encrypting data for secure transmission | | | |
| | (B) Generating random numbers for cryptographic applications. | | | |
| | (C) Ensuring data integrity and authenticity. | | | |
| | (D) Enabling public-key encryption | | | |
| 12. | Which property of a cryptographic hash function ensures that a small change in the input results in a significantly different output? | 1 | 4 | 3 |
| | (A) Reversibility | | | |
| | (B) Collision resistance | | | |
| | (C) Avalanche effect | | | |
| | (D) Preimage resistance | | | |
| 13. | Which cryptographic function involves using two different keys for encryption and decryption? | 1 | 1 | 4 |
| | (A) Hash function | | | |
| | (B) Symmetric encryption | | | |
| | (C) Asymmetric encryption | | | |
| | (D) Digital signature | | | |
| 14. | Which cryptographic function is used to verify the authenticity and integrity of digital messages or documents? | 1 | 3 | 4 |
| | (A) Hash function | | | |
| | (B) Symmetric encryption | | | |
| | (C) Asymmetric encryption | | | |
| | (D) Digital signature | | | |
| 15. | Which property of cryptographic hash functions prevents two different inputs from producing the same hash value? | 1 | 2 | 4 |
| | (A) Avalanche effect | | | |
| | (B) Preimage resistance | | | |
| | (C) Collision resistance | | | |
| | (D) Diffusion | | | |
| 16. | What is unauthorized access in the context of computer security? | 1 | 4 | 4 |
| | (A) Gaining access to a computer system with proper authorization | | | |
| | (B) Gaining access to a computer system without proper authorization. | | | |
| | (C) Gaining access to a computer system using a legitimate user account. | | | |
| | (D) Gaining access to a computer system using open-source software. | | | |
| 17. | What is a "brute-force attack"? | 1 | 1 | 5 |
| | (A) An attack that involves manipulating network traffic. | | | |
| | (B) An attack that relies on exploiting software vulnerabilities | | | |
| | (C) An attack that uses a large number of guesses to crack passwords or encryption keys. | | | |
| | (D) An attack that uses physical force to damage computer hardware. | | | |
| 18. | What is the purpose of intrusion detection systems (IDS)? | 1 | 3 | 5 |
| | (A) To prevent software vulnerabilities. | | | |
| | (B) To analyze network traffic and identify unauthorized access attempts. | | | |
| | (C) To encrypt sensitive data. | | | |
| | (D) To create strong passwords. | | | |

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|--|---|---|---|
| 19. What term refers to non-violent, financially motivated crimes committed by individuals in positions of trust or authority? | 1 | 2 | 5 |
| (A) Blue-collar crimes | | | |
| (B) Organized crimes | | | |
| (C) White collar crimes | | | |
| (D) cyber crimes | | | |
| 20. What distinguishes white-collar crimes from other crimes? | 1 | 4 | 5 |
| (A) They involve physical violence | | | |
| (B) They only occur in the business sector. | | | |
| (C) They are committed by lower-income individuals | | | |
| (D) They are financially motivated and often involve deception. | | | |

PART - B (5 × 4 = 20 Marks)

Answer **any 5** Questions

Marks BL CO

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|---|---|---|---|
| 21. Summarize the criteria to be met by antivirus solutions. | 4 | 1 | 1 |
| 22. How is personal information classified to ensure effective data protection and compliance with privacy regulations? | 4 | 2 | 1 |
| 23. How does the TOR work? | 4 | 3 | 2 |
| 24. Discuss the impact of the DPI technique on privacy | 4 | 4 | 2 |
| 25. Summarize the criteria used for cryptographic algorithm selection in Gpg4Win | 4 | 3 | 3 |
| 26. Identify and briefly discuss two specific threats or risks that can arise when software privacy is compromised. | 4 | 4 | 4 |
| 27. Explain the concept of cloud forensics and its significance in modern digital investigations. | 4 | 1 | 5 |

PART - C (5 × 12 = 60 Marks)

Answer **all** Questions

Marks BL CO

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|---|----|---|---|
| 28. (a) Who needs your personal information? List them and explain what motivates them to perform such actions. | 12 | 1 | 1 |
| (OR) | | | |
| (b) Examine the potential risks associated with online tracking and illustrate these risks with examples to explain their implications. | | | |
| 29. (a) Describe the methods to enhance the privacy of your TOR usage to prevent your ISP from detecting it? | 12 | 2 | 2 |
| (OR) | | | |
| (b) What are the key features and benefits of the Tails anonymous operating system for maintaining online privacy and security? | | | |
| 30. (a) Write short note on
i) cryptographic hash
ii) cryptographic types
iii) cryptographic functions | 12 | 3 | 3 |
| (OR) | | | |
| (b) Classify key exchange algorithms and explain about the digital signature | | | |
| 31. (a) Discuss the techniques and challenges involved in the process of recovering deleted digital evidence. | 12 | 4 | 4 |
| (OR) | | | |
| (b) Discuss the methods, tools, and ethical considerations surrounding password cracking in the field of cybersecurity. | | | |
| 32. (a) Outline the key steps and considerations that forensic analysts must take when investigating WiFi networks for evidence of cyber-crimes or security breaches. | 12 | 4 | 5 |
| (OR) | | | |
| (b) Explore the practical applications of network forensics in the context of digital investigations. | | | |

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