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 **PRESIDENCY UNIVERSITY**

  **Bengaluru**

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| **End - Term Examinations – JANUARY 2025** |
| Date: 07 – 01- 2025 Time: 09:30 am – 12:30 pm |

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| **School:** SOCSE | **Program:** B.Tech-CSE/COM |
| **Course Code:** CSE3350 | **Course Name:** CYBER SECURITY |
| **Semester**: VII | **Max Marks**:100 | **Weightage**:50% |

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| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **26** | **27** | **21** | **26** | **NA** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

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| **Answer ALL the Questions. Each question carries 2marks. 10Q x 2M=20M** |
| **1** | List the important security layers that one must know before implementing any security measures in an organization. | **2 Marks** | **L1** | **CO1** |
| **2** | A government agency is facing issues with implementing effective policies for cyber governance. What is one significant challenge of Internet Governance that the agency might encounter, and how could it impact their policy implementation? | **2 Marks** | **L2** | **CO1** |
| **3** | How are cybercrimes classified? List and write a line on each | **2 Marks** | **L2** | **CO2** |
| **4** | Bring out the differences between a virus and a worm | **2 Marks** | **L1** | **CO3** |
| **5** | List out the motives behind mobile device information leakage. | **2 Marks** | **L1** | **CO3** |
| **6** | Define cyber security assurance | **2 Marks** | **L1** | **CO3** |
| **7** | Explain the term IT-Act with an example. | **2 Marks** | **L2** | **CO4** |
| **8** | Explain the term EDP-Audit with an example. | **2 Marks** | **L2** | **CO4** |
| **9** | Explain the term Cyber-Forensic. | **2 Marks** | **L1** | **CO4** |
| **10** | How an asset and a threat are related to each other? Explain | **2 Marks** | **L1** | **CO1** |

**Part B**

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| **Answer the Questions Total 80 Marks** |
| **11.** | **a.** | Explain the following web-based attacks in detail with a real time example1. Session Hijacking
2. Phishing
3. Brute force
 | **5 Marks** | **L2** | **CO1** |
| **b.** | Explain the following cyber threats in detail with a real time example1. Cyber crime
2. Cyber warfare
3. Cyber terrorism
 | **5 Marks** | **L2** | **CO1** |
| **or** |
| **12.** | **a.** | Explain the following web-based attacks in detail with a real time example1. Injection attacks
2. DNS Spoofing
 | **5 Marks** | **L2** | **CO1** |
| **b.** | A major metropolitan city experiences a sudden shutdown of its power grid, plunging millions into darkness. Investigation reveals that the attack was orchestrated by a cyberterrorism group demanding the release of their imprisoned leader and threatening further disruptions to water supply systems and emergency services. Social media platforms amplify the group's propaganda, creating public panic. As a government official tasked with responding to the crisis, what steps would you take to mitigate the immediate impact of the attack, address public fear, and prevent future **cyber-terrorism** incidents targeting critical infrastructure? | **5 Marks** | **L3** | **CO1** |
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| **13.** | **a.** | A company has experienced a severe data breach due to a sophisticated cyber-attack. The breach involved multiple layers of their security infrastructure. Provide a detailed analysis of how each layer of security was compromised. Recommend comprehensive measures to address these vulnerabilities and strengthen the security posture. | **10****Marks** | **L3** | **CO1** |
| **or** |
| **14.** | **a.** | The categories of cyber-attackers enable us to better understand the attackers' motivations and the actions they take. With a hierarchical diagram explain the attackers’ motives in each category in detail. | **10****Marks** | **L3** | **CO1** |

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| **15.** | **a.** | Explain the difference between passive and active attacks with an example. | **5 Marks** | **L2** | **CO2** |
| **b.** | Explain the Brute force attack in detail. | **5 Marks** | **L2** | **CO2** |
| **Or** |
| **16.** | **a.** | Explain the following with an example1. Anti keyloggers
2. Spywares
 | **5 Marks** | **L2** | **CO2** |
| **b.** | Explain the following with an example1. Software keyloggers
2. Hardware keyloggers
 | **5 Marks** | **L2** | **CO2** |

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| **17.** | **a.** | What are the six phases involved in planning cybercrime? Explain. | **5 Marks** | **L2** | **CO2** |
| **b.** | You are a cybersecurity analyst working for a financial institution. During a routine security audit, you notice unusual network traffic coming from an external IP address attempting to access multiple services on your server. After further investigation, you realize that the attacker is scanning different ports on your server to find vulnerabilities.1. What are ports in the context of networking, and why are they important for both legitimate and malicious activities?
2. Explain in details how Ports and Ports scanning in cyber offenses.
 | **10 Marks** | **L3** | **CO2** |
| **Or** |
| **18.** | **a.** | What is an attack vector? List the different attacks launched with attack vector?  | **5 Marks** | **L2** | **CO2** |
| **b.** | Password is like a key to get an entry into computerized systems like a lock. But the attacker can get into your system by cracking the password. Explain in details what is password cracking and what are the different ways of password cracking? List the different tools that can be used to overcome from password cracking. | **10 Marks** | **L3** | **CO2** |

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| **19.** | **a.** | Explain the following malware types in details.1. Worms
2. Trojan Horse
 | **5 Marks** | **L2** | **CO3** |
| **b.** | You are the Chief Information Security Officer (CISO) of a leading fintech company. Recently, the company has faced two major cyber issues:* A disgruntled ex-employee has allegedly created a blog and several social media posts falsely accusing the company of fraudulent practices, poor data security, and mistreatment of employees. These posts have gone viral, leading to a drop in customer trust and increased scrutiny from regulators.
* Simultaneously, the company’s accounting team discovers that a small, unauthorized deduction—ranging from 5 to 10 cents—has been applied to thousands of customer transactions over the past three months. The total sum misappropriated amounts to a significant figure, and the culprit appears to be using sophisticated methods to hide their tracks.

Identify the types of attacks in both the cases. Explain about the attack in detail | **10 Marks** | **L3** | **CO3** |
| **Or** |
| **20.** | **a.** | Explain the following in details.1. Adware
2. Spyware
 | **5 Marks** | **L2** | **CO3** |
| **b.** | You are a system administrator at a mid-sized company. Recently, several employees reported that their web browsers have been behaving abnormally. They are being redirected to unknown websites when they try to access common pages like Google or the company’s intranet. Pop-up ads and banners have also started appearing frequently, even when no browser windows are open. Identify the types of attacks they are under? Explain about the attack in detail | **10 Marks** | **L3** | **CO3** |

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| **21.** | **a.** | Mr.Ramesh has invented a new design for hand sanitizer. He don’t want any others to copy or prototype his designs. How can he make sure that his designs is not used by others, explain the complete concept in detail to achieve this task. | **10 Marks** | **L3** | **CO4** |
| **b.** | What is CISE? What all it works for? Explain in detail with example for each | **10 Marks** | **L2** | **CO4** |
| **Or** |
| **22.** | **a.** | Assume that you have started a software company some 5 years back. But you are getting many complaints about the proper working of system, security breaches in company. Explain how you can overcome this issue in your company using EDP Audit | **10 Marks** | **L2** | **CO4** |
| **b.** | Write in detail about any top five popular forensic tools used in cyber forensics. | **10 Marks** | **L2** | **CO4** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***