# Avinashilingam Institute for Home Science and Higher Education for Women

**Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)**
**Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC**
**Coimbatore - 641 043, Tamil Nadu, India**

## Master's Degree Examination – May 2025
## II Semester

**Class : I P.G.** **Time: 3 Hours**
**Major : IDRM/Physics/M.C.A.** **Max. Marks: 100**

### 23MITI01 Cyber Forensics

**Course Outcomes:**
CO1 :Describe the essential computer forensic technologies, services and vendors in the field of digital forensic science
CO2 :Demonstrate knowledge in numerous forensic tools and utilization of tools for data recovery and image verification procedures.
CO3 :Identify the significance of a systematic procedure to investigate electronic data in order to discover digital evidence of unlawful activity.
CO4 : Manage with threats related to security and i*nformation warfare*
CO5 :Procure hypothetical knowledge in many areas of computer forensic investigations.

**Part A** **10 x 1 = 10**
**Choose the Correct Answer**

1. Which file system is most commonly used in Windows operating systems? CO1K1
   a. FAT32 b. NTFS c. ext4 d. APFS

2. Which of the following is NOT a key principle of digital evidence? CO1K1
   a. Integrity b. Availability c. Authenticity d. Confidentiality

3 . What is the first step in the digital forensics process? CO2K2
   a. Documentation b. Collection of evidence c. Identification d. Analysis

4. Which of the following is a primary cause of logical data loss? CO2K3
   a. Fire damage b. Physical shock to the drive c. corruption of files d. Liquid spill

5. What is the main purpose of a backup in data recovery? CO2K1
   a. To permanently delete unwanted data b. To store a copy of data for future recovery
   c. To reduce the size of files d. To improve computer speed

6. What is the primary characteristic of electronic evidence? CO3K3
   a. It is always in physical form b. It can be easily altered or deleted
   c. It is not admissible in court d. It cannot be stored on a computer

7. How can investigators ensure the authenticity of electronic evidence? CO3K4
   a. By making multiple copies b. By using cryptographic hash functions
   c. By storing it on a USB drive d. By converting it into a PDF file

8. What is a macro threat in cyber security? CO4K2
   a. A small virus affecting only one computer b. A harmless software update
   c. A large-scale cyber threat impacting multiple systems d. A new type of hardware component

9. Which of the following is an example of a macro threat? CO3K4
   a. A single email phishing attempt
   b. A global ransomware attack affecting businesses worldwide
   c. A forgotten password on a local computer
   d. A software bug in a video game

10. Which forensic method is most effective for evaluating the integrity of digital evidence? CO5K5
   a. Hashing b. Compression c. Encryption d. Formatting

**Part B** **5 x 6 = 30**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

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|---|---|
| 11.a. Describe various vendor and computer forensic services. | CO1K4 |
| (or) | |
| 11. b. Illustrate the importance of computer forensics. | CO1K3 |
| 12.a. What is data recovery, and how is it performed in forensic investigations? | CO2K1 |
| (or) | |
| 12.b. List the key steps in evidence collection and data seizure. | CO2K2 |
| 13.a. Recall electronic evidence, and tell how is it discovered in forensic investigations? | CO3K1 |
| (or) | |
| 13.b. Analyze how past events are reconstructed using digital evidence. | CO3K4 |
| 14.a. How can nations fight against macro threats in cyber security? | CO4K2 |
| (or) | |
| 14.b. Apply the basic military tactics used in cyber warfare. | CO4K4 |
| 15.a. What is surveillance, and how is it used in cyber security? | CO5K2 |
| (or) | |
| 15.b. How does surveillance impact victims and refugees? | CO5K4 |

**Part C** **5 x 12 = 60**

**Answer ALL questions**

**Each answer should not exceed 800 words or four pages**

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|---|---|
| 16.a. Compare different types of forensic technology and their applications. | CO1K5 |
| (or) | |
| 16.b. Design a structured forensic investigation plan using various forensic services. | CO1K6 |
| 17.a. Summarize the process of preservation of Digital Evidence in computer forensics. | CO2K4 |
| (or) | |
| 17.b. Analyze the process of authentication in forensic imaging and its role in investigations. | CO2K6 |
| 18.a. Evaluate the role of network forensics in reconstructing past cyber incidents. | CO3K5 |
| (or) | |
| 18.b. Explain how is digital data identified and extracted in cyber forensic investigations? | CO3K4 |
| 19.a. Describe the tactics used by terrorists and rogue actors in cyber warfare. | CO4K4 |
| (or) | |
| 19.b. Evaluate the cyber tactics used by private companies for competitive advantage. | CO4K5 |
| 20.a. Discriminate the role of advanced surveillance techniques in Cyber security. | CO5K4 |
| (or) | |
| 20. b. Illustrate the application of advanced computer forensics techniques and list their uses. | CO5K3 |

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