

**NATIONAL FORENSIC SCIENCES UNIVERSITY**  
**M.Sc. Digital Forensics and Information Security Semester I**

**Semester End Examination – April-2022**

**Subject Code:** CTMSDFIS SI P1  
**Subject Name:** Computer Forensics  
**Time:** 11:00 AM To 2:00 PM  
**Instructions:**

**Date:** 11/04/2022  
**Total Marks:** 100

1. Write down each question on separate Page.
2. Attempt all Question.
3. Make Suitable assumptions wherever necessary.
4. Figures to the right indicate full marks

**Q-1 Answer the following Questions. (Any Five)**

(04 x 5 = 20)

- a) What is Lockard's Principle of Exchange?
- b) How Write-Blockers can be used?
- c) How to recreate FAT and NTFS Partitions.
- d) Describe HDD and SSD Structures.
- e) Explain Boot Process?
- f) What Is Steganography?

**Q-2 Answer the following Questions. (Any Two)**

(12 x 2 = 24)

- a) What is Chain-of-Custody? Explain in detail.
- b) Explain Windows OS Architecture.
- c) How HFS and HFS+ File System works?

**Q-3 Answer the following Questions. (Any Four)**

(08 x 4 = 32)

- a) Explain primary memory & secondary memory in detail.
- b) Define in-particulars:
  - MBR
  - VBR
  - EBR
  - MFT
  - GPT
- c) Difference between ext3 and ext4 filesystem in Linux.
- d) Describe Event Log Analysis of Windows OS.
- e) Explain elements of computer forensics.

**Q-4 Answer the following Questions. (Any Two)**

(12 x 2 = 24)

- a) Explain and differentiate Data Recovery and Data Carving.
- b) How Evidence Acquisition works?
- c) Explain the following;
  - i. Process Management
  - ii. Memory Management

\*\*\*\*\*End of Paper \*\*\*\*\*

Seat No. 3050

Enrolment No. \_\_\_\_\_

# NATIONAL FORENSIC SCIENCES UNIVERSITY

MSc. DFIS (Incident Response Management)

Semester - I - April-2022

Subject Code: CTMSDFIS SI P3

Time: 11.00AM - 2.00PM

Date: 13-4-2022

Total Marks: 100

## Instructions:

1. Write down each question on separate page.
2. Attempt all questions.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

		Marks
Q.1	(a) Define information warfare. What are the components of information warfare ?	05
	(b) Explain key concepts of information security using suitable example.	05
	(c) Elaborate on any 5 types of computer security incidents.	07
	OR	
	(c) What is a need of incident response ? Explain using suitable example.	07
Q.2	(a) What is a need of incident prioritization ? Draw incident prioritization matrix using impact and urgency.	05
	(b) Compare disaster recovery V/s data backup.	05
	(c) What is recovery time objective (RTO) ? A low TRO was observed in an incident, what does it indicates ?	07
	OR	
	(c) Name and explain 2 disaster recovery technologies from open source software.	07
Q.3	(a) How virtualization can help in incident response handling ?	08
	(b) Explain 5 steps which are used in incident response ?	08
	OR	
	(b) Estimate the cost of following incident. "A lawyer was traveling from Goa to Mumbai by flight. The flight was delayed for 5 hours. Due to delay the lawyer could not remain present for the murder case".	08
Q.4	(a) Using suitable diagram explain the types of incidents.	05
	(b) What is log analysis ? How to capture log files from the system ?	05
	(c) Write in detail about any log analysis tool using suitable data.	07



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**NATIONAL FORENSIC SCIENCES UNIVERSITY**

**M.Sc. Digital Forensics and Information Security -Semester 1 Examination – April-2022**

**Subject Code: CTMSDFIS SI P2**

**Date: 12/04/2022**

**Subject Name: Cyber Security Audit and Compliance**

**Total Marks: 100**

**Time: 11:00 AM To 2:00 PM**

**Instructions:**

1. ~~Write down each question on separate Page.~~
2. Attempt all Question.
3. Make Suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

**Q-1 Write any five questions:**

- a) What are auditing steps within the IT infrastructure? (4)
- b) What is Goal- Based Security Controls? (4)
- c) How Evidence Acquisition works? (4)
- d) Explain Risk Assessment. (4)
- e) How Audit Plan & Audit Process works? (4)
- f) Explain AAA Model in detail. (4)

**Q-2 Write any Two Questions:**

- a) Explain Business Continuity Plan (BCP) (12)
- b) Discuss Types of IT Audits. (12)
- c) What is C-I-A Model in workstation domain? (12)

**Q-3 Write any Four Questions:**

- a) Write detailed note on ISO/IEC 27001. (8)
- b) ~~Explain GDPR and PCIDSS in-detail.~~ (8)
- c) Write HIPAA Act in detail. (8)
- d) ~~What are 7 domains of IT Infrastructure~~ (8)
- e) Explain Disaster Recovery (DR) planning. (8)

**Q-4 Write any Two Questions:**

- a) Write an Audit Process. Compliance within Remote Access and Application Domain. (12)
- b) Write detail note on CAAT. (12)
- c) How to Implement Security Controls in Infrastructure with steps.

OR

(12)

- d) What are the Goals of Audit?



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**NATIONAL FORENSIC SCIENCES UNIVERSITY**  
M.Sc. (Digital Forensics and Information Security) - Semester - I - April - 2022

Subject Code: CTMSDFIS SI P4  
Subject Name: Python and Scripting  
Time: 11:00 AM to 2:00 PM

Date: 16/04/2022

Total Marks: 100

**Instructions:**

1. Write down each question on separate page.
2. Attempt all questions.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

	Marks
Q.1 (a) What are the commands for Manipulating Files and Directories in Shell?	05
(b) what is Job Control in shell?	05
(c) Explain the File System Tree and its Navigation with shell commands?	07
Q.2 (a) Explain the while and for loop conditions in shell script with example?	05
(b) Write short notes on shell script archiving and backup?	05
(c) Explain the Top-Down Design of the shell script project with an example?	07
Q.3 (a) Explain the PIL library for the Image Forensic?	08
(b) What are the conditional statements python with example?	08
Q.4 (a) What are the basic variable of the python?	05
(b) What is the Blacklists and Whitelists?	05
(c) Explain the HTTP Communications with Python Built in Libraries?	07
Q.5 (a) Explain the special variables, and operators in the power shell?	05
(b) What is OS Module in a shell script?	05
(c) Explain the Power Shell scripts, cmdlets, and Advanced Cmdlets?	07
Q.6 (a) Explain the Geolocation Acquisition library in Python?	08
(b) Explain the vi, and basic commands with examples?	08

END OF PAPER



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**NATIONAL FORENSIC SCIENCES UNIVERSITY**  
**MSCS Semester - 1 (April, 2022)-Goa Campus April-2022**

Subject Code: CTMSCS SI P5

Date: 18/04/2022

Subject Name: Introduction to Forensic Science and Law

Time: 11:00 AM to 2:00 PM

Total Marks: 100

**Instructions:**

1. Write down each question on separate page.
2. Attempt all questions.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.

			Marks
Q.1	(a)	Define Forensic Entomology and its application in Forensic Science.	05
	(b)	Give a brief account on cloud storage, how it works and its benefits.	05
	Differentiate between bailable and non-bailable offences.		07
	OR		
	(c)	Differentiate between cognizable and non-cognizable offences.	
Q.2	(a)	What is Mobile Forensic Unit and how is it helpful in crime scene investigation?	05
	What is Cyberethics? Briefly explain some of the breaches of the cyberethics.		05
	OR		
	(b)	Explain Trademark and Patent?	
	(c)	Explain in detail the steps involved in Crime scene Investigation with examples	07
Q.3	(a)	Give a detailed account of the kinds of Punishment mentioned in IPC.	08
	Explain significance of any 4 fields of forensic science in criminal investigation.		08
	OR		
	(b)	Explain the hierarchy of courts in India.	



Q.4	(a)	Why cyber law is necessary in today's world? Give reasons. OR Explain Section 43?	05
	(b)	What is AFIS? Briefly explain its working.	05
	(c)	NCRB functions as a repository on information on crime and criminals. Justify the statement.	07
Q.5	(a)	What are the essential elements of Dowry death as per IPC, 1860?	05
	(b)	Briefly explain any 5 cybercrimes against organization?	05
	(c)	What are INTERPOL notices? Explain any 5 notices in brief.	07
Q.6	(a)	Give a detailed account of types of offences investigated by the central investigative agency of India.	08
	(b)	What is SEM? Explain working principle and its use in forensic science. OR Explain in detail the steps involved in Crime scene Investigation with examples	08