



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION : BACHELOR OF COMPUTER SCIENCE	
QUALIFICATION CODE: 07BAC, 07BCMS	LEVEL: 7
COURSE: COMPUTER FORENSICS	COURSE CODE: CFR712S
DATE: JUNE 2023	SESSION: 1
DURATION: 3 Hours	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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THIS EXAM QUESTION PAPER CONSISTS OF 2 PAGES

(Excluding this front page)

INSTRUCTIONS

1. Answer ALL the questions on the answer scripts.
2. Write clearly and neatly.
3. Number the answers clearly.
4. When answering questions you should be guided by the allocation of marks in []. Do not give too few or too many facts in your answers.

PERMISSIBLE MATERIALS

1. Non-programmable calculator.

Question 1

Explain how the following are useful in computer forensics:

- i. Steganalysis
 - ii. Raw picture format
 - iii. The Daubert Standard
 - iv. ESTMP
 - v. POP3
- [10]

Question 2

- a. Compare a sparse to a logical data acquisition technic. [4]
- b. Comment on two ways how the Ext4 file systems helps in digital forensics investigations as compared to NTFS file systems. [4]
- c. In what way is the EXIF file format helpful when conducting a digital a forensic investigation besides providing metadata. [2]

Question 3

Consider investigating an email abuse at an organisation. Outline five steps you would take to preserve the evidence in such an investigation. [10]

Question 4

- a. Distinguish between RAM Slack and FILE Slack. [4]
- b. You are given the following information about a Windows 10 machine.

Cluster size = 1024B, Sector size 64B

Given that a file's size is **568B**. Given also that the file if store in the Windows 10 machine above. Find the size of

- i. File slack
- ii. RAM slack that is created by storing such a file (Please show all your work). [6]

Question 5

Explain what each of the following computer forensics tools are used for: [10]

- i. HexEditor
- ii. Reg Editor
- iii. Wireshark
- iv. IrfanView
- v. Autopsy

Question 6

Identify the five categories of computer forensics tools and explain at least two sub-function of each category. [15]

Question 7

Identify the five phases of a digital forensic investigation process and explain in detail what happens at each phase. [15]

Question 8

Discuss at least five challenges and at least five opportunities presented by AI to digital forensics investigations. [20]

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