



PAN AFRICAN CHRISTIAN UNIVERSITY

UNIVERSITY EXAMINATIONS 2025/2026

**FIRST TRIMESTER EXAMINATION FOR THE BACHELOR & DIPLOMA IN
CRIMINOLOGY AND SECURITY MANAGEMENT**

DCR 119/BCSL 314: FORENSIC SCIENCE AND LEGAL SYSTEM

Instructions:

There are **FIVE QUESTIONS**. Answer any **THREE QUESTIONS**.

QUESTION 1 CARRIES 30 MARKS IS COMPULSORY. QUESTION 2-5 CARRY 15 MARKS EACH.

Support your answers with relevant examples.

QUESTION ONE

- a) Describe the term forensic science and give ONE relevant example of its application in a Kenyan criminal investigation. (6 marks)
- b) State the TWO primary challenges in defining forensic evidence for legal admissibility. (6 marks)
- c) Distinguish crime scene investigation (CSI) from evidence analysis. (6 marks)
- d) Under the chain of custody principle, when is evidence considered compromised? (6 marks)
- e) Name the constitutional provision in Kenya that protects the right to a fair trial and explain how forensic evidence supports it. (6 marks)

QUESTION TWO

A murder suspect, John, is arrested in Kisumu after a neighbour reports seeing him flee a house where Mary was found stabbed. Forensic teams recover:

- i. A blood-stained knife in a drainage ditch 200m away
 - ii. A torn shirt with blood on John's clothesline
 - iii. A single fingerprint on Mary's phone
- a) Explain whether chain of custody applies to the knife found in the ditch. Support with forensic protocol. (8 marks)
- b) Explain the legal implication if the phone was handled by three officers before packaging. (4 marks)
- c) If the blood on the shirt degrades due to improper storage, what is the legal consequence? (3 marks)

QUESTION THREE

During a Nairobi robbery, the victim is shot. Forensic analysis reveals:

- i. Gunshot residue (GSR) on the suspect's hands
 - ii. A bullet casing with rifling marks
 - iii. Toxicology shows the victim had alcohol in the blood
- a) Discuss the suspect's liability using ballistics evidence to link the firearm. (7 marks)
- b) Justify the role of toxicology in determining whether the victim's intoxication affected the case. (5 marks)
- c) Would environmental contamination of GSR be a valid defense? (3 marks)

QUESTION FOUR

A Mombasa cybercrime unit recovers a laptop used to hack a bank. Digital forensics finds:

- i. Deleted emails planning the crime
- ii. A USB drive with malware
- iii. Autopsy shows the bank manager died of a heart attack during the breach

a) Describe the digital forensics preservation techniques used to the laptop and USB. (10 marks)

b) If the autopsy conflicts with the digital timeline, what offense might still apply? (5 marks)

QUESTION FIVE

In a wildlife trafficking case across Kenya and Tanzania:

- i. DNA matches ivory to a poached elephant
- ii. Ballistics link bullets to a ranger's rifle
- iii. An expert witness testifies on blood spatter

a) Explain expert testimony admissibility under Kenyan law and ONE risk of bias. (6 marks)

b) Examine whether cross-border DNA evidence violates sovereignty under international forensic cooperation? (6 marks)

c) Recommend ONE reform to improve forensic integration in East Africa. (3 marks)