

Section A (40 Marks)

Question One

- a) Define mobile device forensics and explain its importance in digital investigations. (4marks)
- b) Describe the main steps involved in the mobile device forensic process. (4marks)
- c) Explain two common challenges faced during mobile device forensic investigations. (4marks)
- d) Briefly discuss the role of SIM cards in mobile device forensics. (4marks)
- e) Explain how mobile operating systems (Android and iOS) affect forensic analysis. (4 marks)
- f) Discuss the significance of preserving the integrity of mobile evidence during an investigation. (4marks).
- g) What are mobile application forensics, and why is it critical in investigations? (4mks)
- h) Explain two methods used to extract data from mobile devices. (4mks)
- i) Why is chain of custody important in mobile device forensic investigations? (4 marks)
- j) Briefly describe the role of mobile device logs in digital forensics. (4marks)

Section B (60 Marks)

Question Two

- a) Describe two mobile forensics data acquisition methods, including scenarios and tools used. (6 marks)
- b) Mobile forensics faces evolving challenges due to rapid advancements in technology and increasing digital crimes. With reference to this, answer the following:
- i. Identify two challenges related to mobile password security and encryption. (2 marks)
 - ii. List two essential tools or equipment used in mobile forensics investigations. (2 marks)
 - iii. Explain how variations in mobile operating systems impact forensic investigations and how investigators address them. (3 marks)
 - iv. Briefly explain two anti-forensics techniques used to evade mobile forensic analysis. (3 marks)
 - v. Describe the responsibilities of device manufacturers and software developers in supporting mobile forensic investigations. (4 marks)

Question Three

- a) Write short notes on the following concepts as used in mobile forensics
 - i. Logical Extraction (4 Marks)
 - ii. Physical Extraction (4 Marks)
 - iii. Rule of Evidence (4 Marks)
- b) While conducting your forensic duties, you are presented with an exhibit bag containing a mobile phone and a sim card separately. Discuss the forensic actions that you would take and further explain the effects of inserting the SIM Card onto the mobile phone device (4Marks)
- c) List four anti-forensics techniques that criminals use to circumvent mobile forensics analysis (4 Marks)

Question Four

- a) Describe issues that should be factored during transportation of an acquired mobile device from the scene of crime (10Marks)
- b) State the mechanisms that can be used to protect mobile operating systems from attacks (10 Marks)

Question Five

- a) Examine the legal and ethical challenges encountered in mobile device forensic investigations and suggest possible solutions. (10marks)
- b) With examples, describe the tools commonly used in mobile device forensics and evaluate their strengths and weaknesses. (10 marks)

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