



CERTIFIED PUBLIC ACCOUNTANT
FOUNDATION LEVEL 2 EXAMINATION
F2.3: INFORMATION SYSTEMS

DATE: TUESDAY 25, FEBRUARY 2025

INSTRUCTIONS:

1. Time Allowed: **3 hours 15 minutes** (15 minutes reading and 3 hours writing).
2. This examination has **seven** questions and only **five** questions should be attempted.
3. Marks allocated to each question are shown at the end of the question.
4. The question paper should not be taken out of the examination room.

QUESTION ONE

Kangaho Limited (Kangaho) is a local dealer for ordinary electronics. Management of Kangaho has decentralized decision-making to all levels of management, thanks to information systems. Some decisions are very common and routine but very valuable. However, lower managers are interested in learning a proper decision-making process to ensure that they make effective decisions. Two of the most commonly discussed aspects in staff meetings are group decision-support systems (GDSS) and Business intelligence (BI). Kangaho has approached you for guidance regarding effective decision-making.

Required:

- a) Discuss three basic elements of group decision-support systems (GDSS). (6 Marks)
- b) List six basic elements of a business intelligence environment. (6 Marks)
- c) Explain four stages in the decision-making process and how each can be supported by information systems. (8 Marks)

(Total: 20 Marks)

QUESTION TWO

Komera Company Limited (KCL) is a financial services firm operating in Rwanda. You work for KCL in a senior role in the information systems security field and face a critical question during your work one day. You are presented with a scenario involving flagged suspicious transactions and are asked to quickly find a solution.

Your manager requests you to consider the importance of robust transaction monitoring systems as well as the role played by wireless technologies. Your manager also requests that you consider system vulnerabilities in your approach, highlighting strategies for risk mitigation and incident response based on your previous experience. You will present your findings to management and the following questions will be the main focus of your presentation.

Required:

- a) Discuss four reasons why computer-based systems tend to be more vulnerable to damage, error, and fraud than manual systems. (8 Marks)
- b) Describe three major problem areas resulting in information system failure. (6 Marks)
- c) Briefly describe the following technologies for wireless transmission:
 - i) E-mail hand held devices. (2 Marks)
 - ii) Short message service (SMS). (2 Marks)
 - iii) Smart phones. (2 Marks)

(Total: 20 Marks)

QUESTION THREE

You are an Information Technology (IT) Officer at Mutesi Technologies Ltd. Your firm has requested you to help in explaining some important aspects that span a wide range of areas in information systems. Particularly, they are interested in cloud computing, service-oriented architecture, and Enterprise resources planning (ERP) systems.

Required:

- a) State four advantages and disadvantages of cloud computing. (8 Marks)
 - b) State six benefits organizations can gain from implementing Enterprise resource planning (ERP) systems. (6 Marks)
 - c) Briefly describe the following terms used in service-oriented architecture:
 - i) Mobile Applications. (2 Marks)
 - ii) Android. (2 Marks)
 - iii) Apple Store. (2 Marks)
- (Total: 20 Marks)**

QUESTION FOUR

You are an Information Technology (IT) consultant and you have been requested to provide technical assistance to the Ministry of ICT & Innovation. The contracting department has requested you to prepare for a briefing for the Minister to be delivered in two weeks in a senior management meeting. Your briefing shall cover three important aspects, which include data privacy and protection, system development, and information systems testing. Your advice will be crucial in the establishment of key government policies in these areas.

Required:

- a) Discuss four approaches that can be implemented to protect the privacy of Internet users. (8 Marks)
 - b) Describe one reason why information systems testing is crucial and discuss three stages of information system testing. (8 Marks)
 - c) Briefly explain Prototyping and Application Software Packages as used in system development. (4 Marks)
- (Total: 20 Marks)**

QUESTION FIVE

You are a Chief Digital Officer of Rugamba Tech Ltd, a leading technology firm in Rwanda. You are attending a global conference on behalf of your firm. You have been requested by the conference organizers to deliver a session covering three main information technology elements, which include a firm's information technology (IT) infrastructure, database management systems, and data mining. You have been requested to prepare a PowerPoint presentation addressing the following questions.

Required:

- a) State six capabilities of a database management system (DBMS). (6 Marks)
 - b) Define the term ‘data mining’ and explain four types of information obtainable from data mining. (10 Marks)
 - c) List four components of a firm’s information technology (IT) infrastructure. (4Marks)
- (Total: 20 Marks)**

QUESTION SIX

A technology firm specializing in e-commerce solutions is expanding its team to enhance its capabilities in electronic commerce (e-commerce) and mobile e-commerce (m-commerce). The firm seeks candidates who possess strong foundational knowledge and practical experience in these domains to drive innovation and growth. You are presented with the following questions to answer before selection can be made.

Required:

- a) List any four Internet business models for electronic commerce. (4 Marks)
 - b) Discuss six benefits of e-commerce to the organisation. (12 Marks)
 - c) State two reasons why m-commerce represents a tiny fraction of global online purchases. (4 Marks)
- (Total: 20 Marks)**

QUESTION SEVEN

You are an expert in IT Security and regulation. You have been invited in an X (Twitter) Space’s conversation with a prominent Rwandan influencer to discuss specific aspects, which are trending on the internet relating to ethical and social issues related to IT systems. You are requested to address the below questions posed by some of the attendants of the conversation.

Required:

- a) Define the term ‘Computer forensics’ and discuss any three general computer systems controls. (8 Marks)
- b) Define the term ‘ethics’ and briefly describe five moral dimensions of information systems. (7 Marks)
- c) Outline five examples of Ethical Dilemmas related to Information Technology (IT) systems. (5 Marks)

End of question paper