
CERTIFIED ACCOUNTING TECHNICIAN
LEVEL 2 EXAMINATIONS
L2.2: INFORMATION SYSTEMS
MONDAY: 3 JUNE 2019

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 are to be attempted.
3. Marks allocated to each question are shown at the end of the question.
4. Show all your workings.

QUESTION ONE

Some business organizations in Rwanda have adopted the use of internet technology in their business operations. These operations may be external or internal. This technology has become a crucial and indispensable part of almost all organizations. However, some organizations have rejected the technology claiming that using it attracts many challenges.

Kirehe Production Company (KPC) is a newly registered company in Rwanda. The management of KPC benchmarked and found out that organizations using internet technology to manage their business operations are doing better.

As a consultant the management of KPC has approached you to help them gain a better understanding of the above admired technology.

REQUIRED:

- (a) Explain to the management of KPC:
 - (i) The meaning of 'internet technology'. **(2 Marks)**
 - (ii) Any **five** roles that the adopted technology can play in coordinating their business operations. **(10 Marks)**
 - (b) Identify and discuss any **four** challenges organizations may face if they follow the trend that other companies have adopted. **(8 Marks)**
- (Total 20 Marks)**

QUESTION TWO

Gabiro Cosmopolitan Salon (GCS) is a modern beauty shop which offers quality services such as hair dressing, facial cosmetology, manicure and pedicure. GCS employs many attendants who serve the clients and in return are paid commissions on top of their monthly salary. Each attendant receives payments from the client and declares it at the close of the day's business. GCS is also expected to make monthly contributions for all attendants towards a medical insurance scheme known as Rwandaise d'Assurance Maladie (RAMA).

The management of GCS would like to develop an information system to keep track of all transactions of the shop. They have been informed that there are many information systems development approaches, the most popular being the Systems Development Life Cycle (SDLC). Traditionally, the SDLC consisted of five stages that have now increased to seven.

Management have scheduled a meeting to discuss the success of their anticipated systems development project.

You are an information systems expert who has been invited to guide the meeting on technical issues.

REQUIRED:

- (a) Explain to the management of GCS the meaning of SDLC. **(2 Marks)**
 - (b) Briefly explain to GCS management meeting any **five** phases of the approach mentioned in the above scenario. **(10 Marks)**
 - (c) Describe to the management of GCS any **four** critical factors to consider in order to ensure that the systems development project is successful. **(8 Marks)**
- (Total 20 Marks)**

QUESTION THREE

Kinigi Ltd is an organization that helps people in Rwanda process their international operations including transfer of funds, orders and other related information using an established information system. The company's information system service provider has advised that to handle their clients' issues effectively, they have to invest in computer security since the current system is vulnerable and can be abused resulting to loss of data, system errors and disruptions. To implement this, Kinigi Ltd has to consider important security requirements, security facilities and employ appropriate security methods.

Based on the advice of the service provider, you have been approached by Kinigi Ltd as an information technology expert.

REQUIRED:

The management of Kinigi Ltd, has asked you to:

- (a) Explain any **two** core security requirements they need to consider while planning for a computer security system. **(4 Marks)**
 - (b) Describe any **four** security threats Kinigi's information systems may face. **(8 Marks)**
 - (c) Suggest any **four** security methods they may employ to avoid the stated results from information system threats. **(8 Marks)**
- (Total 20 Marks)**

QUESTION FOUR

Kacyiru Institute of Accountancy (KIA) would like to develop and implement a results management software to display results and fees balances for each student. The students who have fees balances will not be able to access their results. Additionally, this new system will enable students who have access to the internet to view their fees payment details and semester results from anywhere. Students can use smart mobile phones and computers to connect to the internet.

The new system will also require the use of different types of software which include operating systems and utility software among others. It is important to note that this software is delicate and therefore requires routine care or else it malfunctions.

REQUIRED:

- (a) Explain to KIA the meaning of the following software terms:
 - (i) Operating systems. (2 Marks)
 - (ii) Utility software. (2 Marks)
 - (b) Suggest and describe any **two** examples of operating systems that can be used by mobile smart phones and computers to connect to the internet. (8 Marks)
 - (c) Apart from disk defragmenters, briefly explain any other **four** utility software KIA may use. (4 Marks)
 - (d) Describe any **four** activities KIA may carry out as routine care for software. (4 Marks)
- (Total 20 Marks)**

QUESTION FIVE

Database Management System (DBMS) is a system that handles the storage, retrieval and updating of data in a computer system. The DBMS runs the database and there are different types of database depending upon the usage requirements. Some components of the DBMS include hardware, database languages, data and procedures.

Whereas DBMS makes work easy, the use of DBMS may come along with problems which organisations must be aware of. It is important for the organisation to look for ways of solving these problems so that the DBMS runs effectively.

Bugesera Savings and Credit Co-operative (SACCO) (the SACCO) located in eastern Rwanda with a membership of about 1 million people across Rwanda in four branches and plans to set up a database management system to store, control, preserve and transfer data and information effectively amongst the members.

The management of the SACCO have approached you as a skilled personnel in information systems requesting to be guided on the modalities of establishment of a database management system.

REQUIRED:

The management of SACCO have asked you to:

- (a) Suggest any **three** types of databases that the management can choose to establish their DBMS. **(6 Marks)**
 - (b) Explain any **four** considerations to take care of before selection and implementation of the DBMS. **(8 Marks)**
 - (c) Describe any **three** likely problems that may arise as a result of using the DBMS. **(6 Marks)**
- (Total 20 Marks)**

QUESTION SIX

Gasana Telecommunications Company (GTC) is a new company dealing in assorted electronic equipment whose headquarters is in Gisenyi town of the Western Province. GTC as a new company has many competitors dealing in similar products and because of their experience they have a competitive advantage over other companies.

The Executive Director (ED) of GTC has been informed by business analysts that computers and information systems are essential parts of every business today and that every business needs to invest in technology to compete favourably.

Depending on the type of information system used, a business can prepare, store, analyse and sort through volumes of information from customers, suppliers, inventory and accounts among others. With such information systems, a business can therefore manage its information, make better decisions and improve the execution of their business processes.

REQUIRED:

- (a) Explain to the ED of GTC the meaning of the term information system. **(2 Marks)**
 - (b) Describe any **four** types of information system GTC can use to improve its business processes. **(8 Marks)**
 - (c) Justify to GTC, with **five** reasons, why information systems are considered to be essential for every business. **(10 Marks)**
- (Total 20 Marks)**

QUESTION SEVEN

Uwera Secretarial Bureau (USB) has been using stand-alone computers for a long time to serve its customers. However, with the increasing use of technology their customers have reduced tremendously moving to other bureaus because of the slow pace at which they were being served.

The management of USB has been advised by a consultant to shift from stand-alone computers to networked computers in order to improve their service delivery. It is important to note that each computer whether stand-alone or networked has got a control unit that controls all activities of the computer.

Additionally, the consultant advised the management of USB that hardware and software requirements of networked computers are different from those of a stand-alone computers.

The Director of USB has approached you as an expert for guidance.

REQUIRED:

- (a) Explain to the director any **three** functions of the control unit in the execution of USB's tasks. **(6 Marks)**
 - (b) As stated by the consultant recommend any **three** network hardware components that USB needs to establish a computer network in their business. **(6 Marks)**
 - (c) Explain to the director of USB any **four** benefits that they will enjoy after networking their computers. **(8 Marks)**
- (Total 20 Marks)**
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