



INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS OF RWANDA  
Driving Sustainable Performance



# CERTIFIED ACCOUNTING TECHNICIAN

## LEVEL 2 EXAMINATION

### L2.2: INFORMATION SYSTEMS

**MONDAY: 6 JUNE 2016**

#### INSTRUCTIONS:

1. **Time Allowed: 3 hours 15minutes** (15 minutes reading and 3hours 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

SOCAM Limited with only 10 members of staff has maintained its activities in Kigali, having changed its top management a year ago, following the retirement of a long service Chief Executive Officer (CEO).

In the last auditor's report, concern was raised on the lack of segregation of roles across the management levels. It was reported that low-level staff have system access rights belonging to higher management category. The response then was the low staffing which results in staff crossing ranks during execution of business operations.

As a newly recruited information management officer at SOCAM Limited, the new CEO has offered you a slot during this month's Management Committee meeting to provide them with professional advice.

### Required:

- (a) Describe in detail, how information systems in SOCAM Limited can be efficiently organised across the management levels. **(8 Marks)**
- (b) In terms of the standard system dimensions (input, process, output, storage, and system control):
  - (i) Describe the major functions of any two sub-function areas under a transaction processing system (TPS). **(2 Marks)**
  - (ii) For each sub-function in (b) (i) above, indicate the major application systems to be put in place to accomplish the required tasks. **(4 Marks)**
- (c) Describe to the management any three possible challenges that may be caused by introducing and implementing a strategic information system in SOCAM Limited. **(6 Marks)**

**(Total 20 Marks)**

## QUESTION TWO

Kagitumba Savings and Credit Group (KSCG) wishes to introduce a telecommunications system in their organization. This is because they have confirmed through their research the benefits associated with its functions in relation to their business operations.

KSCG through a labour agency has contracted you as their systems manager to coordinate the project of setting up the telecommunication system. Your duties will include identifying the suitable components of the system and contracting the project team.

### Required:

- (a) Identify any four hardware components you would require to successfully set up the telecommunications system for Kagitumba Saving and Credit Group. **(4 Marks)**
- (b) Explain any five functions of a telecommunications system that Kagitumba Savings and Credit group could have based on to set up their system. **(10 Marks)**
- (c) Describe any three major points you would consider in selecting the telecommunications software for the Kagitumba Savings and Credit Group system. **(6 Marks)**

**(Total 20 Marks)**

### QUESTION THREE

Uwera Computer Services Ltd (UCSL) is a business that generates large amounts of data and its data files change throughout the working day. Due to some unavoidable circumstances, the company has sometimes experienced data loss, corruption, compromise and theft through hardware failure, human error, hacking, malware and natural calamities. Loss and corruption of data has resulted into significant business disruptions.

You are a qualified computer security professional. UCSL has contracted you to manage their security issues so that they run their business without being afraid of the uncertainties that they have been experiencing before.

#### Required:

- (a) (i) Explain the term 'logical security measures' as used by computer security Professionals. (2 Marks)
- (ii) Describe three logical security measures you would put in place for Uwera Computer Services Ltd to guard against data loss, corruption, compromise and theft. (6 Marks)
- (b) Explain three different types of data backup to the directors of Uwera Computer Services Ltd which can be applied for efficient data management. (6 Marks)
- (c) You are expected to set up a disaster recovery plan for Uwera Computer Services Ltd so that when there is a technological failure with either software or hardware, there will be continuity of operations. Part of the disaster recovery plan should contain the level of backup that is necessary to be maintained to minimize impacts of those outages on the uptime. This leads to disaster recovery sites which come in three stages.

#### Required:

- Explain the three types of recovery sites. (6 Marks)
- (Total 20 Marks)

### QUESTION FOUR

The management of School Suppliers Rwanda Limited (SSRL), a company that manufactures and distributes scholastic materials, has agreed to improve the company's operations by reviewing their information communications technology (ICT) system to enable them provide better services to their clientele and hence increase productivity.

In one of their annual review meetings, the distribution manager proposed the introduction of a wireless application on top of the other existing e-business applications to enable them easily communicate to the field contacts.

However, some of the shareholders felt uncomfortable with the introduction of the wireless communication fearing that hackers would easily gain access to company information.

#### Required:

- As an information technology expert, explain to the shareholders of SSRL: (2 Marks)
- (a) (i) The term 'e-business'.
  - (ii) Five issues to take note of during the implementation of the proposed e-business application for the company. (10 Marks)



- (b) Assure the concerned shareholders on any four advantages of wireless application to the company. (8 Marks)
- (Total 20 Marks)

### QUESTION FIVE

To develop an information system, there are many approaches from which the developer can choose. These include systems development life cycle, waterfall, prototype and rapid applications development.

These approaches have core stages a developer needs to follow to complete the development process. The stages are **system study, system analysis, system design, testing, implementation and maintenance**. Through the above stages, the major focus is on the scope, cost, and quality of the system. This conditions the developer to make the necessary analysis of the scope to work within the requirements of the beneficiaries; cost to make sure it is affordable and quality for the output of the system.

You are the information manager of Hagarara Property Masters Limited (HPML) which is planning to set up a system to monitor their transactions with their customers. You have been assigned to prepare a brief report to discuss with management.

#### Required:

- Identify any four responsibilities of an information manager at the stage of system study. (4 Marks)
- Explain any four reasons why a cost benefit analysis should be considered as a core focus in the system development process of the HPML. (8 Marks)
- Examine the significance of a new information system HPML is contemplating in setting up to monitor the transactions of their customers. (8 Marks)

(Total 20 Marks)

### QUESTION SIX

Women Rural Economic Development (WRED) in partnership with local training boards across Nyagatare District, has hired Harerimana Computer Training Experts to conduct a series of computer training for twenty Nyagatare rural women focus groups. The results of these focus group trainings should minimise employment barriers and skill gaps that rural women have been experiencing as a result of computer illiteracy.

You are one of the experienced trainers of Harerimana Computer Training Experts and will participate in the training sessions.

#### Required:

- Prepare a presentation of your training:
  - Identifying any two auxiliary functional units of a computer system giving an example for each. (4 Marks)
  - Explaining the functions performed by each auxiliary functional unit of a computer system identified in (a) above. (4 Marks)
  - Highlighting the computer evolution stages with emphasis on significant technological developments that have fundamentally changed how computers operate. (8 Marks)

- (b) Before the Nyagatare rural women can start being trained on how to practically use computers to accomplish some business activities, they should be sensitized on the different data processing abilities of computers. Describe to the women any two classifications of computers. (4 Marks)

(Total 20 Marks)

## QUESTION SEVEN

The customer billing statements for the Shushi Telecom Company (R) Limited for the month of January, 2016 were generated with errors and unknowingly distributed. This anomaly damaged the company's corporate image considerably as numerous complaints were registered within a short time, some over social media. The Chief Executive Officer (CEO) immediately issued an apology and retrieved the enormous statements.

The database system used to produce the monthly customer billing statements uses the data from the key departments. However, all departments denied responsibility for the errors.

The CEO has constituted an inquiry to which you have been appointed as a lead investigator to submit a report in two weeks.

### Required:

In your initial presentation to the team:

- (a) Describe the four file organization methods. (4 Marks)
- (b) (i) Identify four possible causes of the errors in Shushi Telecom Company (R) Limited's customer billing statements. (4 Marks)
- (ii) Suggest how the company should avoid recurrence of the errors identified in the scenario above. (4 Marks)
- (c) Despite the above happenings in the scenario above, other institutions have continued to use the database systems supplied by the same vendor.

### Required:

Explain any four reasons for their continued reliance on this type of database system. (8 Marks)

(Total 20 Marks)

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## End of question paper





