

CERTIFIED PUBLIC ACCOUNTANT

LEVEL 2 EXAMINATION

F2.3: INFORMATION SYSTEMS

THURSDAY: 9 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

Downloading of applications and installing them on client or personal computers may sound attractive. However, all things in life come with a share of bad things, like in case of an information system, the application may overwrite all files, infect the machine with viruses and avail machine Internet Protocol (IP) addresses to different networks which makes it vulnerable to attackers. Some organizations, for this matter, incorporate data security and control measures in their information systems and some software come with in-built measures to help/support users to efficiently and effectively achieve data quality.

Required:

- (a) Given the above scenario, explain four benefits that accrue to organizations that adopt security and control measures in their information systems. **(8 Marks)**
 - (b) (i) Distinguish between data quality control and data quality assurance. **(4 Marks)**
(ii) Suggest any four security and control measures an organization may incorporate in its information system to secure its components. **(8 Marks)**
- (Total 20 Marks)**

QUESTION TWO

When an organization chooses to computerize all its business processes at different levels of management and collaborate with other organizations that have done the same, it is referred to as a digital firm. Every digital firm's information systems exist within social and political institutions. Social institutions (including families, education and organizations) have developed well-honored rules of behavior and are supported by laws developed in the political arena that prescribe acceptable behavior and put in place sanctions for violations.

Uwimana Beverages Ltd (UBL) intends to computerize all its business processes. You have been recruited as their overall information systems manager.

Required:

- (a) Explain any four benefits UBL will gain as a result of total computerization of all its business processes. **(4 Marks)**
- (b) The introduction of computerized systems has a ripple effect raising new ethical, social and political issues that must be dealt with on the individual, social and political levels.

Required:

- Discuss any four major ethical, social and political issues that may arise as a result of computerizing all the business activities of UBL. **(8 Marks)**
- (c) As UBL's overall information systems manager, explain any four challenges you may experience as you execute your duties in relation to the ethical, social and political issues raised in (b) above. **(8 Marks)**
- (Total 20 Marks)**

QUESTION THREE

Mwasa Group of Companies operates a chain of outlets but has not been performing well, having realized losses leading to the closure of two upcountry outlets namely Nyagatare and Musanze and consequently relieving fifty staff of their duties.

The Board recently approved the recruitment of a new business development manager to review the business operations and turnaround the groups' performance with the help of information communication technology (ICT).

Following an advert in the Times Newspaper, you applied for the job and have been invited for an interview in the boardroom this afternoon.

Required:

(a) Explain to the panel the most appropriate areas of application of information communication technology in the different departments of Mwasa Group of Companies. **(10 Marks)**

(b) Describe the challenges you envisage in the execution of the task of a business development manager of Mwasa Group of Companies. **(10 Marks)**

(Total 20 Marks)

QUESTION FOUR

ULUMVA Limited, an educational services provider, made a decision to deploy machines like computers in all its activities. This required them to set up computerized systems like information systems and communication networks.

The company employed an information systems manager to oversee the networking process by a contracted company and coordinate the setup of the information systems at all levels of the company.

Required:

(a) Identify any four reasons as to why ULUMVA Limited was compelled to take a decision to use an office automated system. **(4 Marks)**

(b) (i) In your presentation to the top management of ULUMVA Limited, describe what is meant by a 'transaction processing system'. **(2 Marks)**

(ii) Explain any four activities that will be executed by the transaction processing system to support the information processing of ULUMVA Limited. **(8 Marks)**

(c) Describe any information system that you may establish at the strategic level for the company and state its characteristics. **(6 Marks)**

(Total 20 Marks)

QUESTION FIVE

Grocery stores provide a vital service to the public, and are a major source of employment in many countries. Some grocery store work can be physically demanding. Many grocery store workers handle thousands of items each day to stock shelves, check groceries, decorate bakery items, and prepare meat products. These tasks involve several economic risk factors. The most important of these include force, repetitive routine work, awkward posture, and static postures. This has resulted in occupational injuries and illnesses.

Kaibanda and Brothers Supermarket is a grocery store in Kigali. Its management wishes to reduce on the occupational injuries and illnesses that come as a result of the several ergonomic risk factors mentioned above. It has approached you as a consultant on developing computer systems that mimic human behavior in carrying out different tasks in organizations to help them reduce on the occupational injuries and illnesses.

Required:

- (a) Explain four benefits of setting up an artificial intelligence system to the management of Kayibanda and Brothers Supermarket. (4 Marks)
- (b) Basing on your arguments in (a) above, the management of Kayibanda and Brothers Supermarket has resolved that you help them understand how an artificial intelligence system works.

Required:

Using an illustration, explain the five major parts of an artificial intelligencesystem. (10 Marks)

- (c) Discuss the three challenges you will be faced with, in the acquisition of knowledge required for the setup and maintenance of an artificial intelligence system for Kaibanda and Brothers Supermarket. (6 Marks)
- (Total 20 Marks)

QUESTION SIX

Mega Limited has been in operation for ten years. Five years ago, the company acquired a system that replaced manual operations. The acquisition was carried out following the system development life cycle (SDLC) requirements and then commissioned.

The performance of the company has however been gradually declining in the last two years. Many clients have been lost to their rivals due to declining customer satisfaction, service delivery, customer care, failure to acquire stock on credit, un-renewed system license, difficulty in operating the system by staff and accumulating bank loan arrears.

The owners of the company have approached you for technical and professional advice.

Required:

- (a) Explain to the owners of Mega Limited:
- (i) What could have gone wrong in the acquisition of the system five years ago? (4 Marks)
- (ii) How else they could have acquired the system other than through the conventional (SDCL) ethod. (4 Marks)
- (b) Propose to the owners of Mega Limited the necessary considerations they now have to put in place while improving the information communications technology status of their company. (12 Marks)

(Total 20 Marks)

QUESTION SEVEN

BankBank.com is a bank regulatory database containing five databases for regulated depository financial institutions under the umbrella of Twungurane Banking Services. These databases provide accounting data for commercial banks and savings and credit institutions. The source of the data is the required regulatory forms filed for supervision purposes. This data is entered into the databases using computer systems.

You have been recruited as a database administrator for Twungurane Banking Services.

Required:

- (a) Explain four elements of the database environment of Twungurane Banking Services. (8 Marks)
- (b) The computer systems used for entering data into the databases of Twungurane Banking Services have hardware, software and human ware components.

Required:

- (i) Explain the three basic hardware components of a computer system. (3 Marks)
- (ii) With the help of an illustration, describe the relationship of the hardware components in (b) (i) above. (3 Marks)
- (c) The management of Twungurane Banking Services has realized some loopholes with BankBank.com. With your experience as a database administrator, give six roles that will be played by the team of database programming professionals that you will work with to build a new regulatory database for Twungurane Banking Services. (6 Marks)

(Total 20 Marks)

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