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## **CERTIFIED ACCOUNTING TECHNICIAN (CAT)**

### **LEVEL 2 EXAMINATIONS**

#### **L2.2: INFORMATION SYSTEMS**

**MONDAY: 4 JUNE 2018**

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#### **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.

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## QUESTION ONE

Seromba Company Ltd (SCL) is a well-established company operating in central part of Rwanda. SCL specialises in Importation and Exportation of food stuffs. Recently SCL has been challenged with the high number of competitors who have come up exporting and importing the same food stuffs

As a way of solving the problem, the company has been advised to establish an Information System which it can use in-order to enhance her competitive advantage.

You have been approached by the management of Seromba Company limited as an Information Systems expert for technical advice.

### REQUIRED:

- (a) With reference to Porter`s Competitive Forces model, describe to the management Seromba Company Ltd any four competitive forces that may come from the upcoming competitors  
**(8 Marks)**
- (b) Using any three reasons, justify the advice given to Seromba Company Ltd  
**(6 Marks)**
- (c) Describe to the management of SCL any three challenges they are likely to face as a result of using an Information System to solve the problem associated with the company`s competitors  
**(6 Marks)**

**(Total 20 Marks)**

## QUESTION TWO

Mobile food vending is a new innovation which has been embraced by many entrepreneurs in Kibuye City. It is now common to see food served from wheeled carts, mobile vans along streets and at times motorcycles are used to deliver food. It will not take long before we witness door to door food vending and delivery across the country.

Mr. Nshizirungu is one of the many entrepreneurs in the mobile food industry in Kibuye City who wish to gain a competitive advantage and attract more clients by vending food online. To manage the online business, he has been advised to use customized application software as opposed to general purpose application software.

Kambanda, an Information Technology (IT) expert has further recommended that they build a mobile application to enable prospective clients take a virtual view of what food is on offer, place orders and send suggestions about areas of improvement among others. He also advised that software upgrades will from time to time be required to keep the mobile application functioning well.

**REQUIRED:**

- (a) Explain to Mr Nshizirungu the distinction between customized and general purpose application software as used in the scenario above.  
**(2 Marks)**
  - (b) Discuss four reasons why Mr Nshizirungu has been advised to use customized application software.  
**(8 Marks)**
  - (c) Briefly describe any three programming languages which may be used to build the mobile application recommended by Mr Kambanda which clients can use to take a virtual view of food on offer.  
**(6 Marks)**
  - (d) Using two reasons, explain why it is important to upgrade software used by Mr Nshizirungu's mobile application.  
**(4 Marks)**
- (Total 20 Marks)**

**QUESTION THREE**

Umutoni Designing Company is an advertising and designing company that offers services to organisations and individuals. Their services include printing Billboards, magazines, invitation cards, reports and other correspondences.

In their activities basing on recommendations from their Board of Directors, the company uses a Dot-Matrix, Inkjet or LaserJet printer.

The company has made it a policy to use Laser jet printers for printing magazines and reports in their offices.

Umutoni Designing Company was recently visited by Nzamba Designers to benchmark on their technology since they produce quality work.

**REQUIRED:**

As an Information Systems officer of Umutoni Designing Company, you have been requested to explain to Nzamba Designers:

- (a) Factors that your company considered selecting the printers.  
**(8 Marks)**
  - (b) Reasons why Umutoni Designing Company made it a policy to use a Laser Printer for the specific tasks mentioned in the scenario above  
**(8Marks)**
  - (c) Ways they can use to keep their printers in a good working condition so as to maintain the quality of the print output.  
**(4 Marks)**
- (Total 20 Marks)**

## QUESTION FOUR

Ogoma Gome (R) Ltd (OGL) is a company found in Rwamagana district that deals in an energy drink called GomPlus or G+ in short. G+ contains high caffeine content, Vitamins B-12 and B-6, sodium, potassium, carbohydrates, flavours plus various forms of ginseng. These ingredients are added to carbonated water in delicate proportions and concentrations which is a top secret to beat off competition from rival companies.

OGL has set up a Data Warehouse used to collect quality data through a process known as data mining. Owing to OGL's outstanding performance, many companies in the district try to gain unauthorized access to OGL's business data in order to understand how the company is operating and this has made the company's data insecure. The Managing Director (MD) of OGL has approached you as an expert for professional advice.

### REQUIRED

- (a) Explain to the MD the meaning of the following terms as used in the scenario above.
    - (i) Data mining **(2 Marks)**
    - (ii) Data warehousing **(2 Marks)**
  - (b) Describe to the MD any four characteristics of quality data. **(8 Marks)**
  - (c) Propose to the MD any four measures the company can take to monitor intrusion and protect the warehouse to ensure data security. **(8 Marks)**
- (Total 20 Marks)**

## QUESTION FIVE

Ntarugera and Sons Ltd deals with the purchase and sell of Property which include land, houses/buildings, and used household items. For proper and effective operations, the Company has been advised to establish an Information System which will control and help them manage their business operations.

The establishment of Information System will require a process of System Development that includes stages like System Investigation, Systems Analysis, System Design, Implementation and System Maintenance.

However, Information System development projects sometimes fail because of various reasons. But more ironical is the fact that when connected to the internet, the information system may have a negative impact on their business.

## **REQUIRED:**

Assume that you have been approached by the Information systems personnel of Ntarugera and Sons Ltd as an Information Systems Consultant.

- (a) Describe to them any three activities that are involved in the implementation stage of the System Development Process.  
**(6 Marks)**
  - (b) Explain to Ntarugera and Sons Ltd any four (4) reasons why Information Systems projects sometimes fail.  
**(8 Marks)**
  - (c) Discuss any three (3) negative impacts of internet provisions that come along with the information Systems that will be set up by the Ntagurera and Sons Ltd.  
**(6 Marks)**
- (Total 20 Marks)**

## **QUESTION SIX**

Bip Dop Consults (BDC) is a busy firm offering professional services in Rwanda and the neighbouring countries of the East African Community. From their headquarters at Gitarama, they are able to communicate with their clients using e-mails and video conferencing.

For their day to day management of internal business, they use computerized systems to monitor progress of tasks, prepare reports and make payments to staff. The resulting system is technically known as a transaction processing system (TPS). Important to note in transaction processing are the different file classifications.

BDC is now the lead business consultancy firm for most of the big companies and prospective investors in the region. The nature of their work has grown to a level where they need many highly trained professionals to handle complex tasks and render competent advice.

Unfortunately there are only a few highly skilled staff suited to this task. To cope with this challenge, computer specialists have advised BDC to integrate unique and analytical systems called Decision Support Systems (DSS) and train part of the management staff on how to use it.

## **REQUIRED**

You have been approached by the management of BDC as an Information Systems expert;

- (a) Explain to them the meaning of the following terms as used in Information Systems
  - (i) Transaction processing system **(2 Marks)**
  - (ii) Master file **(2 Marks)**
  - (iii) Transaction file **(2 Marks)**
- (b) Describe any four (4) benefits BDC may get from using e-mail as a form of communication with their clients.  
**(4 Marks)**
- (c) Give four (4) reasons why you would discourage BDC from using video conferencing  
**(4 Marks)**
- (d) Using three reasons, justify why the computer specialist advised BDC to use a decision support system.  
**(6 Marks)**

**(Total 20 Marks)**

## **QUESTION SEVEN**

Rwanda's Vision 2020's pillar to build a knowledge-based economy is anchored in the development of E-commerce (Jean-Pierre 2015). The citizens of Rwanda have seen it as an opportunity to establish E-business that facilitate buying and selling of goods and services online through use of Facebook, Whatsapp, Messenger and Short Message Service(SMS) commonly known as Mobile Commerce.

Ngoga Food Experts wishes to exploit this opportunity by introducing a food Service project using mobile commerce in the organisations' offices. The Company approached you as an Information System Expert for advice;

### **REQUIRED:**

- (a) Explain to the Ngoga Food Experts, the meaning of mobile commerce and identify any **two** ways how they will apply mobile commerce in their business.  
**(4 Marks)**
- (b) Discuss to the management of Ngoga Food Experts any **five** benefits of starting up food services using mobile commerce.  
**(10 marks)**
- (c) Discuss any **three** managerial challenges that Ngoga Food Experts will encounter in the implementation of the food service project using mobile commerce.  
**(6 marks)**

**(Total 20 Marks)**

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