

**CERTIFIED ACCOUNTING TECHNICIAN**

**LEVEL 2 EXAMINATIONS**

**L2.2: INFORMATION SYSTEMS**

**MONDAY: 27 NOVEMBER 2017**

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**INSTRUCTIONS:**

1. **Time Allowed: 3 hours 15 minutes** (15 minutes reading and 3 hours writing).
2. This examination has **seven (7)** questions and only **five (5)** questions are to be attempted.
3. Marks allocated to each question are shown at the end of the question.
4. All iCPAR Examination rules and regulations apply.

*Attempt any five questions*

### **QUESTION ONE**

A new hospital in Byumba Town has appointed you as the information security officer. Your first task is to draft a security policy to be presented to the management board. You decide to start by performing a security risk analysis to determine what to protect. This process is pursued to identify the hospitals' assets and the potential threat posed to the assets. To protect the hospital's data against error, destruction or loss, you realize you need preventive maintenance guidelines.

#### **REQUIRED:**

- (a) Identify any four hospital assets you would include in the risk analysis report to the board. **(4 Marks)**
- (b) Describe any four security policies you would recommend to the Board. **(8 Marks)**
- (c) Explain any **four** preventive maintenance and security control measures you would recommend. **(8 Marks)**

**(Total 20 Marks)**

### **QUESTION TWO**

Mr. Baritazare owns the biggest printery in Kibeho trading as BARI Printery Ltd. You are an information systems expert working for KZ Consultants Limited. Mr. Baritazare has hired your company to develop a 5-year strategic plan for his business. Within the strategic plan you have included the development of an information system. On presenting the plan to Mr. Baritazare, he demands that this project is removed since he does not think it is important to his business. However, you know the importance of information systems to a business and have decided to discuss the issue with him.

#### **REQUIRED:**

- (a) Explain to Mr. Baritazare the:
  - (i) Meaning of 'an information system'. **(2 Marks)**
  - (ii) Four types of information system that can be employed by BARI Printery Ltd. **(8 Marks)**
- (b) Recommend, giving at least **three** reasons, one appropriate information system that may be used at the operational level of management for BARI Printery Ltd. **(4 Marks)**
- (c) Explain to Mr. Baritazare any **three** positive impacts of the information systems to the business. **(6 Marks)**

**(Total 20 Marks)**

### QUESTION THREE

The Ministry of Information and Communications Technology has embarked on an ambitious project that will see Rwanda become a software development hub in East Africa. The government has recruited many software development practitioners to prepare for software outsourcing contracts expected from the region. You have been selected to address a workshop whose theme is: "**Software Outsourcing**": *The Role of Software Maintenance and Utility Programs*.

#### REQUIRED:

- (a) Explain to the participants of the workshop:
    - (i) The meaning of 'software maintenance'. **(2 Marks)**
    - (ii) Any **two** types of software maintenance. **(4 Marks)**
  - (b) Describe any **four** benefits of software outsourcing in software development. **(8 Marks)**
  - (c) Identify and explain any three utility programs. **(6 Marks)**
- (Total 20 Marks)**

### QUESTION FOUR

Considering the trends in telecommunications which include rapid technological innovation and use of networks among others, most organizations have created computer networks to link up their departments. You are the information technology officer in GYG and you have sent a proposal to management requesting them for funds so that you can create a computer network for all the departments in the office in order to improve on their transaction processes and how they deal with their customers. Management is not sure if this is important and has invited you to make a presentation showing them the importance of computer networks to an organization like theirs.

#### REQUIRED:

- (a) Explain the following terms used in communication networks:
  - (i) Router **(1 Mark)**
  - (ii) Switch **(1 Mark)**
  - (iii) Network interface device **(1 Mark)**
  - (iv) Network packets **(1 Mark)**
- (b) With illustration, explain to management the three network topologies which can be established in those offices. **(6 Marks)**

- (c) Some managers are skeptical about the plan of networking and are not supporting it.

**REQUIRED:**

Advise them on the usefulness of network development to the employees of Gitarama Youth Group.

**(10 Marks)**

**(Total 20 Marks)**

**QUESTION FIVE**

Computers are the key item behind the information technology (IT) revolution sweeping the world from simple entertainment to complex scientific research. The central processing unit (CPU) using parts such as the arithmetic logic unit (ALU), control unit, registers and program counter receives instructions and data; and manipulates it to produce desired output. Depending on the type of IT infrastructure, computers can do virtually anything a human being can do. Computers can now be used anywhere and anytime with large amount of data to store. Cloud computing is becoming popular because of storage of data in 'space' while Green Computing is now the trend.

**REQUIRED:**

- (a) As an information systems student, describe the purpose of each of the following parts of the CPU:
- (i) Arithmetic logic unit. **(1 Mark)**
  - (ii) Control unit. **(1 Mark)**
  - (iii) Register. **(1 Mark)**
  - (iv) Program counter. **(1 Mark)**
- (b) Explain any four features of green computing as a current trend in IT infrastructure. **(8 Marks)**
- (c) Describe any four IT infrastructure components. **(8 Marks)**

**(Total 20 Marks)**

**QUESTION SIX**

The process of building and implementing a new information system brings about change in organizations. The introduction of new information systems has several stages that must be put into place before it is viable to use by the organization. It also includes changes to the process, jobs, skills and structures of the organizations. The Republic of Rwanda would like to help all organizations to develop and implement Information systems. For this therefore, the government has organised a workshop to sensitize the directors of organizations about the development of information systems. You are the information systems expert and have been appointed on the sensitization team.

**REQUIRED:**

- (a) Explain the directors on the **seven** major stages required to set up a new information system with reference to systems development life cycle. **(7 Marks)**
- (b) Explain the directors any **four** organizational changes that come along with implementation of information systems. **(8 Marks)**
- (c) Explain any **five** considerations for developing and maintenance of a new information system. **(5 Marks)**
- (Total 20 Marks)**

**QUESTION SEVEN**

With the increasing use of Internet technology by the population of the Republic of Rwanda, individuals and businesses are turning to wireless devices with wireless network connections to the Internet to communicate and obtain information and data. This has tremendously promoted electronic commerce in almost all forms of businesses in Rwanda. However, in the process of using Internet technology in e-commerce, businesses have experienced a lot of challenges that have resulted into huge losses. The Republic of Rwanda is devising means to help the population to reduce the challenges that have risen from the use of Internet technology in their businesses. You have been contracted by Rwanda Utility Regulatory Authority (RURA) to carry out an investigation on these challenges.

**REQUIRED:**

- (a) Describe any **three** devices commonly used for wireless transmissions in Rwanda. **(6 Marks)**
- (b) Explain any:
- (i) **Four** benefits that Rwandans are gaining from the use of WiFi network in their businesses. **(4 Marks)**
- (ii) **Five** challenges that are encountered by Rwandans as a result of using Internet technology in e-commerce. **(5 Marks)**
- (iii) Suggest possible solutions to curb down the challenges identified in (b) (ii) above. **(5 Marks)**
- (Total 20 Marks)**

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**End of question paper**





