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**COMMUNICATION INFORMATION
TECHNOLOGY**

July, 2006

Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

**HIGHER DIPLOMA IN LIBRARY AND INFORMATION MANAGEMENT
HIGHER DIPLOMA IN ARCHIVES AND RECORDS MANAGEMENT
MODULE 1**

COMMUNICATION INFORMATION TECHNOLOGY

3 hours

INSTRUCTIONS TO CANDIDATES

1. *This paper consists of **SIX** questions.*
2. *Answer **question 1** and any **THREE** other questions.*
3. ***Question 1** carries 40 marks.*
4. *All other questions carry equal marks.*

This paper consists of 4 printed pages

Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

1. Read the case below and answer the questions that follow.

Saint George is a children's hospital linked to a medical faculty of a Kenyan University. It has seven departments in separate locations with a total capacity of 200 beds. The hospital has 300 employees distributed as follows:

35 doctors, 45 medical assistants, 130 nurses and 90 non-medical staff.

Information and Communication Technology (ICT) is part of the finance department simply because that was the first department to use computers. The ICT unit has five employees all of whom are technicians. Their main responsibility is to maintain existing computer applications in the finance department. These include:

- A system which stores data about patients, including treatments and their costs.
- The financial system which generates and sends out invoices for treatments and records payments.
- The personnel system that manages employees records and their pay.

These three applications run on a server networked to ten terminals in the finance department. Both software and hardware are old and need a lot of maintenance. This is taking up most of the time of the ICT staff. They have neither the capacity nor expertise to meet requests for new and improved applications.

The directors of the hospital have been complaining that they rarely get management information to help them make informed decisions. Financial reports are often out of date, making financial planning difficult.

Simple questions about the number of patients, costs of treatments and costs per patient are difficult to answer. The same applies to questions from government bodies and insurance companies.

There are also problems at the operational levels as parents complain that tests are being repeated on their children by different doctors because the doctors cannot easily access each other's data. It is often not clear what prescription the other doctors have given and therefore, it is hard to get information on the comparative success of treatments.

The medical departments criticise the support they receive from the ICT unit. Doctors complain that the computerised patients' file based in the ICT unit, is unreliable hence they prefer to use their own computer or paper-based files. Most of them now use their budgets to buy personal computers. These computers are sometimes networked within the departments for administrative functions. Others use computers to support their medical work for example in diagnosis or to record treatment given.

As doctors have taken these initiatives independently, the hospital now has many incompatible software packages in use. The head of finance has realised that there is a problem in the ICT unit. He has requested the board of directors to authorise him to hire a consultant to study the problems and recommend solutions. The request was approved with a condition that he first prepares terms of reference for approval by the board before the commencement of the assignment.

- (a) As the head of the ICT unit, you have been assigned by the head of finance to prepare the terms of reference for the ICT consultancy to be presented to the board of directors. Prepare the terms. (10 marks)
- (b) Discuss the problems that Saint George Hospital is likely to experience in computerising all its operations. (20 marks)
- (c) Explain the benefits Saint George Hospital would derive from networking all its departments. (10 marks)
2. (a) A government agency with more than 300 employees, working in three different buildings installed an e-mail facility to enhance communication. A year after implementation, less than 10 percent of the employees use this new technology fully. Explain the factors that may have contributed to the low usage of the e-mail facility. (10 marks)
- (b) Explain the methods that should be used during the system development life cycle to ensure that the developed system meets its objectives. (10 marks)
3. (a) Delta Enterprises recently installed a new information system which the users of the system are not utilizing effectively.
- Prepare a checklist that Delta Enterprises can use to evaluate the new information system, highlighting the importance of each item on the checklist. (12 marks)
- (b) Analyse the factors that would influence the selection of the mode of computer processing in Mukutano Enterprise, a large service organisation with its head office in Nairobi, six regional offices and service points in every district in Kenya. (8 marks)
4. (a) Discuss the changes that might occur in a large manufacturing company if an expert communication information technology system is implemented. (12 marks)
- (b) Explain the features of fourth generation computer languages (4GLs) involved in system development. (8 marks)

5. (a) Explain the circumstances under which it is appropriate to use Local Area Networks (LANs) as opposed to Wide Area Networks (WANs). (8 marks)
- (b) Discuss the reasons why the first phase of a communication information technology system development life cycle is critical to the success of the rest of the project. (12 marks)
6. (a) Discuss the factors that would influence the use of a Computer Decision Support System (DSS) by a manager. (12 marks)
- (b) Explain the problems that are likely to be encountered when collecting data from farmers in a large district. (8 marks)