

2209/103  
INFORMATION SYSTEMS MANAGEMENT  
July 2011  
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL  
DIPLOMA IN INFORMATION TECHNOLOGY  
MODULE 1  
INFORMATION SYSTEMS MANAGEMENT  
3 hours

**INSTRUCTIONS TO CANDIDATES**

*You should have the following for this examination:*

*Answer booklet.*

*Answer any FIVE of the following EIGHT questions.*

*All questions carry equal marks.*

**This paper consists of 5 printed pages.  
Candidates should check the question paper to ascertain that all the  
Pages are printed as indicated and that no questions are missing.**

1. (a) (i) State **two** reasons for using *binary number* system in a computer system. (2 marks)
- (ii) Outline **two** contributions of Turing's colossus in the historical development of computers. (4 marks)
- (iii) Perform the following operations:
- I. add  $76_8$  to  $66_8$ ; (1 mark)
- II. convert  $F326_{16}$  to its binary equivalent. (1 mark)
- (b) (i) Distinguish between *analog* and *digital* computers. (4 marks)
- (ii) With the aid of a diagram, describe the *fetch-execute cycle* as used in computers. (4 marks)
- (c) Describe the working principle of a *touch screen* as applied in computers. (4 marks)
2. (a) Distinguish between a *dumb* and an *intelligent* terminal as used in computers giving an example in each case. (4 marks)
- (b) Printers that combine three functionalities have become common in the market today. Explain **two** advantages and **one** disadvantage of this model of printers. (6 marks)
- (c) Define the following terms as used in computer systems:
- (i) database;
- (ii) field. (2 marks)
- (d) (i) State **two** advantages of *random file organization* method. (1 mark)
- (ii) Describe the following types of files giving an example in each case:
- I. Report;
- II. Reference. (3 marks)
- (iii) Chekin is a new company which is in the process of installing computers to automate data storage. Explain **four** factors that would influence the choice of the file organization method for the company's database. (4 marks)

3. (a) (i) Outline **two** disadvantages of DBMS other than cost and related costs of maintenance. (2 marks)
- (ii) Explain **three** limitations of a conventional file system. (3 marks)
- (b) (i) Explain the **three** offences defined by the Computer Misuse Act of 1990. (6 marks)
- (ii) Jamii Systems Company Ltd. has been faced with the problems of data and software loss in the last four months. Explain **two** control measures the manager could apply to secure the company's data and software. (4 marks)
- (c) With the aid of an example in each case, describe the following data processing modes:
- (i) batch;
- (ii) online. (5 marks)
4. (a) (i) State **two** advantages of using questionnaires during *fact-finding*. (2 marks)
- (ii) Distinguish between *data administration* and *database administration*. (4 marks)
- (b) In a certain organization data processing is carried out by data clerks using slide rule and tables. The transactions are recorded on source documents which are then passed to the data processing department:
- (i) Identify the type of processing being used at the company. (2 marks)
- (ii) Describe **three** circumstances under which the type of processing identified in (i) will **NOT** be appropriate. (3 marks)
- (c) With the aid of a diagram in each case, describe **three** database models. (9 marks)
5. (a) (i) Explain the term *phishing* as used in computer criminology (2 marks)
- (iii) Femish Computer Company stores data, information and applications in a magnetic tape. Describe **two** physical security precautions the company would use to protect the contents in the storage medium. (2 marks)



- (b) (i) Describe each of the following management functions:  
I. organizing;  
II. coordinating. (4 marks)
- (ii) Outline **four** approaches that an organization would use to manage change. (4 marks)
- (c) State **two** disadvantages of using purchasing to procuring information technology tools. (2 marks)
- (d) The Board of Governors in Market Technical College would like to procure a proxy server for the institution. Describe **three** factors that would influence the choice of the procurement method to use. (6 marks)
6. (a) (i) Differentiate between *systems engineer* and *software developer* as used in Information Technology. (4 marks)
- (ii) Describe **three** functions of a systems analyst in an organization. (6 marks)
- (b) (i) Define the term *fault management* as used in system maintenance and support. (2 marks)
- (ii) Describe **two** performance measuring tools in a computer system. (4 marks)
- (c) Distinguish between *preventive* and *scheduled* maintenance. (4 marks)
7. (a) Explain **two** purposes of carrying out audit of systems under development. (4 marks)
- (b) With the aid of a diagram, describe *mesh network* topology. (4 marks)
- (c) Describe **three** possible causes of an information system project failure. (6 marks)
- (d) (i) Distinguish between *expert* and *office automation* systems. (4 marks)
- (ii) Outline **two** features of transaction processing system. (2 marks)
8. (a) Describe each of the following management components of a decision support system.  
(i) dialogue;  
(ii) model. (4 marks)

- (b) (i) With the aid of a diagram, describe **three** levels of management clearly showing the type of information system used in each level. (5 marks)
- (ii) Explain **two** typical features of the information system found in the highest level of the diagram drawn in (i). (4 marks)
- (c) Zek's Company Limited is in the process of redesigning its product and related packaging in order to meet the expectations of the current market. Table 1 shows the activities undertaken with their corresponding numbers. Completion time in days is also given for each activity. Use it to answer the questions that follow.

Activity	Activity undertaken	Immediate predecessor(s)	Completion time(days)
A	Product design	-	40
B	Package design	-	15
C	Order and receive components for redesigned product	A	16
D	Order and receive materials for redesigned packaging	B	10
E	Product assembling	C	14
F	Package makeup	D	7
G	Package redesigned product	E,F	7
H	Market testing for redesigned product	G	40
I	Redesigned product revision	H	7
J	Redesigned packaging revision	H	7
K	Presentation of results to the management board.	I,J	4

Table 1

- (i) Draw a *network analysis diagram* to represent the information in table 1.
- (ii) Determine the *critical path*. (7 marks)