451/3
COMPUTER STUDIES
Paper 3
(Project)
March to September 2016
7 months

THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education
Computer Studies
Paper 3
(Project)
7 months

Instructions to candidates

(a)   *Candidates are expected to use Database Management Systems in developing their projects.*
(b)   *A softcopy of the work done must be stored in a removable storage medium.*
(c)   *Your name and index number should appear on the cover page of your documentation and on the storage medium.*
(d)   *Each candidate should hand in a hardcopy and a softcopy of the project documentation.*
(e)   ***Candidates should answer the questions in English.***

This paper consists of 3 printed pages.

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

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MASHINA RESIDENTS REGISTRATION SYSTEM

A regional government wishes to create a database for its population based on employment details, residence and land details so as to enable planning, security and other policy decisions. In order to accomplish this objective, the regional government embarked on capturing information on employers, employees, residents and land use.

Each employer is required to register with the government. During registration, employers are required to provide their physical location details which include the registration number of the land where they are located and area of specialization such as farming, manufacturing and business among others. For those in employment, details of their occupation such as name of the employer and salaries are captured.

Self-employed individuals are also required to provide details of their occupation and income.

All workers, residents, business people and land owners are required to provide amongst others occupation and physical address.

All land details in the region are captured. They include land registration numbers, owner details, location, size, use among others.

Design a well documentated database system to do the following:

(a)   Generate list of employees by occupation.

(b)   Generate list of residents by location.

(c)   Generate a report showing all employers with their respective number of employees in a descending order.

(d)   Compute percentage of land in terms of usage.

(e)   Compute average earnings per occupation.

(f)   Categorise each employee based on annual income as follows:

Income (Ksh)	Category
Less than 35 000	Low
From 35 000 to 1,500,000	Middle
Greater than 1,500,000	Upper

(g)   Compute the number of people per household.

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(h)   Categorize each resident based on age as follows:

Age (years)	Category
Less than or equal to 12	Child
From 13 to 18	Youth
over 18	Adult

THE KENYA NATIONAL EXAMINATIONS COUNCIL

Kenya Certificate of Secondary Education

COMPUTER STUDIES
(PROJECT)

MARKING SCHEME
(CONFIDENTIAL)

THIS MARKING SCHEME IS THE PROPERTY OF THE KENYA NATIONAL EXAMINATIONS COUNCIL AND IT MUST BE RETURNED TO THE KENYA NATIONAL EXAMINATIONS COUNCIL AT THE END OF MARKING EXERCISE.

This marking scheme consists of 5 printed pages.

ITEM	MAXIMUM MARKS	MARKS AWARDED
1. TITLE PAGE		
(a) Name and index number of candidate	½	
(b) Title of the project	½	
(c) Year of examination	½	
(d) Name of school	½	
TOTAL	**2**	
2. TABLE OF CONTENTS		
(a) List of contents	1	
(b) Correct referencing	1	
(c) Completeness (All major headings included)	1	
TOTAL	**3**	
3. LIST OF FIGURES/TABLES		
(a) List of figures/tables	1	
(b) Correct referencing	1	
TOTAL	**2**	
4. PROJECT REPORT		
(a) Technical specifications		
(i) Binding	1	
(ii) Fully typed text	2	
(b) Content specifications		
(i) All diagrams drawn using a software application tool	2	
(ii) Logical sequencing of content	1	
TOTAL	**6**	
5. ACKNOWLEDGEMENT		
(a) Existence	½	
(b) Relevance	½	
TOTAL	**1**	
6. INTRODUCTION		
(a) Existence	1	
(b) Relevance	1	
TOTAL	**2**	

ITEM	MAXIMUM MARKS	MARKS AWARDED
7. ANALYSIS		
(a) Problem definition	1	
(b) Problem analysis		
Overview of the current situation	2	
(c) Proposed system		
(i) Objectives	1	
(ii) Scope of the system	1	
(iii) Benefits	2	
(iv) Feasibility (Technical and any 2 others @ 1 each)	3	
TOTAL	**10**	
8. SYSTEM DESIGN		
(a) System design tools (e.g System flow chart)		
(i) Correct symbols	1	
(ii) Logic	1	
(iii) Labels	1	
(b) Table design		
(i) Appropriate fields and data types (any 20 fields @ ½ mark for every 2)	5	
(ii) Normalization/Grouping of variables into appropriate entities (at least 5 entities)	5	
(c) Input/output design		
(i) Input design (at least 3) @ 1 mark each	3	
(ii) Output design (at least 4) @ 1 mark each	4	
TOTAL	**20**	

ITEM	MAXIMUM MARKS	MARKS AWARDED
9. SYSTEM CONSTRUCTION		
(a) Tables (at least 5 @ 1 mark each)	5	
(b) Relationships (at least 4 correct links @ 1 mark each)	4	
(c) Input screens (at least 4 screens @ ½ mark each)	2	
(d) Data manipulation (use of any of: queries, procedures, functions, modules or combinations) to obtain:		
• Percentage of land usage	4	
• Average earning per occupation	3	
• Categorizing employee's annual income (low, middle, upper)	3	
• No. of people per household	2	
• Categorising residence by age	3	
• List of employees by occupation	2	
• Extraction of list of residence per location	2	
• Extraction of list of employees by employer	2	
(e) Output screens		
• Reports (any 3 @ 1 mark each)	3	
TOTAL	**35**	
10. DEMONSTRATION BY THE CANDIDATE		
(a) Loading/running the system	1	
(b) Data capture	2	
(c) Navigation (use of appropriate navigation controls)	2	
(d) Data maintenance (edit, append, delete)	2	
(e) Input validation (any 4 @ ½ mark)	2	
(f) Results (any 2 reports with summary @ 1 mark each)	2	
TOTAL	**11**	

ITEM	MAXIMUM MARKS	MARKS AWARDED
11. USER MANUAL		
(a) Installation guide/requirements	1	
(b) Launching the system	1	
(c) Navigation guide	1	
(d) Procedure of generating output	1	
TOTAL	**4**	
12. MISCELLANEOUS		
(a) Conclusion	1	
(b) Recommendation	1	
(c) Bibliography	1	
(d) Appendices	1	
TOTAL	**4**	
GRAND TOTAL	**100**	