
FORM 4 ENTRANCE EXAMS 2024

NAMECLASSADM NO.....

INDEX NO. CANDIDATE'S SIGNATURE

451/1

COMPUTER STUDIES

PAPER 1

(THEORY)

TIME: 2 ½ hours

Kenya Certificate of Secondary Education
(K.C.S.E)

451/1

COMPUTER STUDIES

PAPER 1

(THEORY)

FEBRUARY 2022

TIME: 2 ½ hours

Instructions to Candidates

- (a) Write your **name** and **index number** in the spaces provided above.
- (b) This Paper consists of two sections **A** and **B**.
- (c) Answer **ALL** the questions in section A.
- (d) Answer **question 16** (compulsory) and any other **THREE** questions from section **B**.
- (e) **All** answers should be written in the spaces provided.
- (f) This paper consists of **12** printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY

Section	Questions	Candidate's score
A	1- 15	
	16	
	17	

B	18	
	19	
	20	
	TOTAL SCORE	

Section A (40 Marks).

Answer all questions in the spaces provided

1. i) Define the term computer booting. (1 mark)

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- ii) State three reasons that can make a user to warm boot a computer (3 marks)

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2. Direct data capture is one major way of inputting data into computers. State Three advantages for using an optical bar recognition. (3 marks)

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3. State the function of the following keyboard keys. (2 marks)

i) Scroll Lock

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ii) Num Lock

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4. Explain why powder and liquid fire extinguishers are not recommended in a computer laboratory. (2 marks)

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5. Distinguish between relative cell referencing and absolute cell referencing as used in computing giving an example in each case (2 marks)

6. Computer technology has evolved from the first to the fifth generation computers. Name the technology, memory and programming language used in the 2nd generation computer. (3 marks)

programming language.....

ii) Power surge

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iii) Brownout

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10. Define the term networking as used in computing. (1 mark)

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11. Differentiate between softcopy output and hard copy output in computers. (2 marks)

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12. Explain the following monitor terminologies as used in computing. (3 marks)

i) Resolution

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ii) Color depth

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iii) Pixels

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13. Differentiate between registers and Buses as used in computing. (2 marks)

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14. Explain the following types of memories .

(2 marks)

i) Buffer memory

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ii) Cache memory

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15. a) Define the term troubleshooting as used in computing.

(1 mark)

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b) State Three problems that may be experienced when using windows operating system

(3 mrks)

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Section B (60 Marks).

Answer Question 16 and Any Other Three Questions from this Section

16. While developing software, the source code must be converted to object code, so that the computer can understand and execute the instructions; that process is called **translation**.

a) List **two** translating programs required to do that process. (2 marks)

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b) State **two** reasons why some programming experts prefer low-level languages over high-level languages while developing programs for use in a computer. (2 marks)

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c) A MOKASA class sat for a test in eight subjects. A student must get an average of 60% in all subjects in order to pass. A program is needed to accept data, process and generate a report that will show the **name**, **marks** obtained by each student per subject, the **average** mark and whether the student has **passed** or **failed**.

(i) **Write** a pseudocode used to solve this problem. (5 marks)

(ii) Draw a flowchart for the above program.

(6 marks)

17. (a) Define the term data processing

(1mk)

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(b) Distinguish between the following sets of terms as used in data processing

(i) Indexed sequential and Serial file organization

(2mks)

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(ii) Interactive and Batch processing modes

(2mks)

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(iii) Master file and Report file

(2mks)

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(c) Explain Three computer crimes that compromise data integrity

(6mks)

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(d) Explain WORM with respect to viruses.

(1mk)

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(e) Identify the name given to the type of error that results from an arithmetic operation failing to produce an expected result

(1mk)

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18. a) i) Describe how data is represented in an optical storage device.

(2 marks)

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b) i) Convert the decimal number 38.625_{10} to binary

(2 mrks)

ii) Convert the Hexadecimal number $DA3.BC_{16}$ to Octal

(2 mrks)

c) i) Letter N is represented by 1001110 using a certain coding scheme. Identify the type of coding scheme used
(1 mark)

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ii) Using the same coding scheme named in C (i) above , show how letter K can be represented (2 marks)

d) Using twos complements, 8-bit representation, subtract 43_{10} from 27_{10} giving your answer in decimal notation
(5 marks)

e) Using Binary coded decimal (BCD), find the value of 234_{10}

(1 mark)

19. (a) Explain the following functions of operating system

(i) Memory management

(2mks)

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(ii) Input/Output management

(2 marks)

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(b) Maria, the school secretary prefers to compress her disk instead of using it in its original form. Give Two reasons for her preference

(2 marks)

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(c) Identify two ways in which operating system organizes information in a computer

(2 marks)

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(d) Distinguish between portability and authenticity in relation to computer software

(2mks)

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(e) A file is a group of related data designated by file name and the extension. The table below shows the file extension and the description of the file. Fill the blank spaces

(2 marks)

File extension	File description
.Sys	System file containing commands loaded during boot up
.txt	
	Ms-word document file

f) i) Differentiate between Firmware and Utility software

(2 marks)

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ii) Name the application software used to create presentations inform of slides

(1 mark)

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20. A school wishes to be connected to the internet to enhance its service delivery.

a) State any **two** internet connectivity requirements that should be considered for the school to get connected.
(2 marks)

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b) Nashipae wants to download a music album from a website to her computer. State **two** factors that determine the time taken to complete the download.
(2 marks)

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c) The figure below shows an extract from compose e-mail window. Use it to answer questions that follow.



(i) Name the icon labeled **X** and explain its purpose in e-mail.

(2 marks)

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(ii) Write in full the meaning of the abbreviations **Cc** and **Bcc** respectively. (1 mark)

d) One advantage of a database management system is centralization of data and enforcement of integrity.

(i) Explain what is meant by enforcing integrity in databases. (1 mark)

(ii) Identify the type of database models depicted in each of the figures Q and R below. (2 marks)

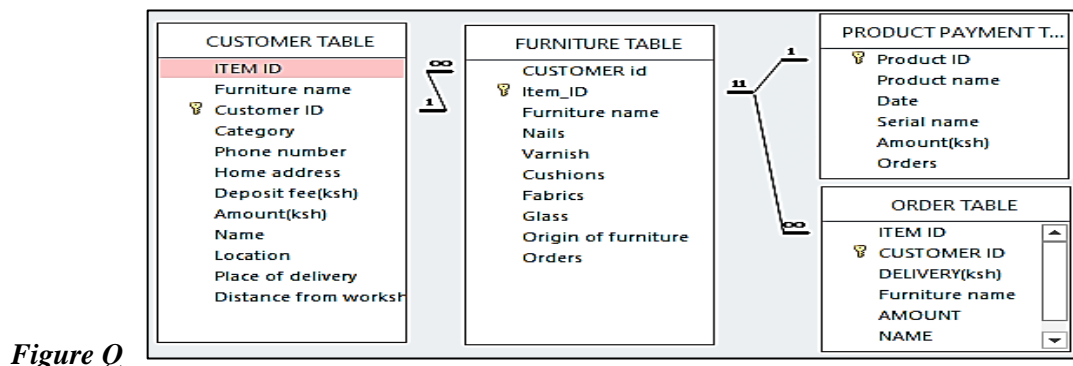


Figure R

Pilot_Name	Abdul Mohammed
Emp_Number	KQ649
Total Pay	680,000
Number of flights	100
Flight Hours	68
Position	Lead Pilot

e) (i) Define the following terms as used in desktop publishing. (2 marks)

- Master page

- Cropping

(ii) State **three** factors considered when choosing a desktop publishing software. (3 marks)

QUESTION 1 - SPREADSHEET	MAX MARK	AWARDED
(a) (i) Creating spreadsheet file named WELFARE REG (ii) Data entry (appropriate)	1 14	
(b) Use of SUM function in column E2 (i) E2=sum(B2:D2) Total registrations per school (ii) Total registrations per term B9=sum(B9:D9)	3 3	
(c) Computing average number of registrations for each term in column F USING formula=(B2+C2+D2)/2	2	
(d) Renaming the sheet 1 as Reg 1 .	1	
(e) (i) Using the "IF" function to display comments: =IF(F2>=1500,"Optimum",IF(F2>=700,"Fair",IF(F2<700,"Too low"))) (ii) Using the COUNTIF function to display the number of schools who managed to have a fair registration =COUNTIF(G2:GF8,">1500")	4 1	
(f) Formating worksheet 1 (Reg 1) as follows: <ul style="list-style-type: none"> • Resize the column heading to fontsize 16 and applying bold. • Applying borders to all cells containing data. • Grey background colour to all column headings 	2 1 1	
(g) (i) Label % increment in cell A16 and a value 7 as percentage data	1	
(ii) Inserting a column before Term1 <ul style="list-style-type: none"> - Using absolute cell referencing =(\$C\$16*C2)+C2 to calculate the total number of registrations for Term 3 2020. - Labelling the column as T3-2020. 	$\frac{1}{2}$ 2 $\frac{1}{2}$	
(h) Using a function in cells B17 and B18 respectively determine: <ul style="list-style-type: none"> • <u>Total registrations =COUNTIF(F2:F8,">1500")</u> • <u>Minimum number of registrations for Term 2 =MIN(D2:D8)</u> 	2 2	
(i) Copying data in sheet 1 to sheet 2 Rename it as Graph .	1 1	
(j) Creating bar graph and labeling as required <ul style="list-style-type: none"> • Chart title: <i>Welfare Registrations 2021</i> • Y-axis: <i>Total Number of Registrations</i> • X-axis: <i>School Name</i> • Legend Position: <i>Right</i> 	1 1 1 1 1	
(k) Printing <ul style="list-style-type: none"> - Reg 1 sheet. - CHART 	1 1	
TOTAL MARKS	50	

QUESTION 1 -WORDPROCESSOR		MAX MARK	AWARDED
A Creating WORD document MYVISA Typing of the word document(Data entry) -Strike through(1mk) -Bullets (1mk) -Superscript/Subscript(2mks) Logo -Shapes(Stars/Banners/ellipse) (3mks) -Shape fills/Grouping		1 05 01 01 02 03 03	
TOTAL		16MKS	
Footer Presence/accuracy		02	
B Alignment :Centre Font style : Algerian Font size : 16		01 01 01	
C. Dropcap Presence Drop by 4 lines		01 01	
d Margins Top 1.0cm Left 1.0 cm		02	
E Line spacing columns		01 02	
F Table 4 rows/3columns Data entry on the table		01 04	
G Correct formular for: - Total - average		02 02	
h. Data source table 7columns/4 rows Table data entry Saving as CC		01 03 01	
i Automated mail merging with 3 documents Saving MYVISACC		04 01	
j Page numbers Top tight		01 01	
k. MY VISA - MYVISACC addressed to Mukami Faith		01 01	

TOTAL MARKS	50	
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