451/2

COMPUTER STUDIES

Paper 2

(PRACTICAL)

June 2023

2 ½ hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

KASU Joint Examination Test

COMPTUER STUDIES

Paper 2

2 ½ hours

Instructions to candidates

- (a) Indicate your name and index number at the top right hand corner of each printout
- (b) Write your name and index number on the CD/Removable storage medium provided.
- (c) Write the name and version of the software used for each question attempted in the answer sheet provided
- (d) Answer all the questions
- (e) All questions carry equal marks
- (f) Passwords should NOT be used while saving in the CD/Removable storage medium
- (g) All answers must be saved in your CD/Removable storage medium
- (h) Make a printout of the answers on the answer sheet
- (i) Arrange your printouts and tie/staple them together
- (j) Hand in all the printouts and the CD/Removable storage medium used
- (k) This paper consist of 5 printed pages
- (l) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that o questions are missing

QUESTION ONE

Hello welcome to artificial intelligence

What Is Artificial Intelligence?

Artificial Intelligence is the field of developing computers and robots that are capable of behaving in ways that both mimic and go beyond human capabilities. AI-enabled programs can analyze and contextualize data to provide information or automatically trigger actions without human interference.

What Is Machine Learning?

Machine learning is a pathway to artificial intelligence. This subcategory of AI uses algorithms to automatically learn insights and recognize patterns from data, applying that learning to make increasingly better decisions.
By studying and experimenting with machine learning, programmers test the limits of how much they can improve the perception, cognition, and action of a computer system.
Deep learning, an advanced method of machine learning, goes a step further. Deep learning models use large neural networks — networks that function like a human brain to logically analyze data — to learn complex patterns and make predictions independent of human input.

How Companies Use AI and Machine Learning

To be successful in nearly any industry, organizations must be able to transform their data into actionable insight. Artificial Intelligence and machine learning give organizations the advantage of automating a variety of manual processes involving data and decision making. Some expressions including basic numbers like squares of numbers e.g 23^2 and base value of numbers like $H4C_{16}$ can be processed.

By incorporating AI and machine learning into their systems and strategic plans, leaders can understand and act on data-driven insights with greater speed and efficiency. The table below shows the company's per country that have implemented AI and machine language and the expected growth rate in five years time.

Country	NO. of AI machines	% growth	Increment per year
Kenya	50	5%	
Uganda	45	4.5%	
Tanzania	48	3%	
Zimbabwe	30	3%	
somalia	25	2%	

a) Using a word processor application, create the above document as it appears and save it as **KASU 1 exam**   **13 marks**

b) Insert the AutoShape as it appears   **2 marks**

c) Spell check your document   1 mark

d) Copy the above document into a new word document and save it as **Kasu Final exam**
                                                                                                                        3 marks

e) Format all the titles in the document as follows:

i. Font type Aerial   1 mark

ii. Font size 14.5   1 mark

iii. Font colour Black, text 1   1 mark

iv. Double underline   1 mark

v. Bold italic   1 mark

vi. Character spacing Expanded 150%   2 marks

f) .Insert a dropped drop cap to 2 lines in the first paragraph starting with the word "artificial intelligence" and in margin drop cap to 2 lines in the second paragraph starting with the word "machine learning"   2 marks

g) Find the abbreviation AI and replace it with artificial intelligence   2 marks

h) Insert two columns in the 2nd last paragraph starting with "to be successful" with a line in between them   2 marks

i) Format the titles in the table as follows:

i. Centre align all the titles   1 mark

ii. Change the text direction of the titles on the table to 90^{0} 1 mark

iii. Double strike through   1 mark

iv. Bold   1 mark

j) Enter a formular to get the yearly increament for Kenya   2 marks

k) Enter a formula to calculate the total NO. of AI machines in the five countries above
                                                                                                                        2 marks

l) Insert a row above row one, merge all the cells and enter an appropriate title for the table
                                                                                                                        3 marks

m) Insert the header of your document as **© your name** and footer as your **class and admission number**   2 marks

n) Insert a caption with the title Artificial intelligence in East Africa   2 marks

o) Print KASU1 exam and Kasu Final exam   2 mark

QUESTION TWO

The table below shows a soccer league at the end of the season. The league comprises of 15 teams and each played 29 matches to close the season. Using a spread sheet program, represent the data and answer the questions below:

TEAM	COUNTY	MATCHES PLAYED	MATCHES WON	MATCHES DRAWN	MATCHES LOST	POINTS	TEAM POSITION	TEAM AWARDS
SHIRA FC	NORTH	29	10	16				
SATIMA FC	SOUTH	29	6	20				
NANGA FC	EAST	29	17	5				
LOGAN FC	NORTH	29	5	15				
KILIMANJARO	EAST	29	10	11				
KILIMAMBOGO	WEST	29	20	2				
KARISIMBI	WEST	29	4	19				
KAMET UNITED	WEST	29	8	20				
GESSI	SOUTH	29	12	7				
FUJI FC	SOUTH	29	14	9				
EVEREST AC	EAST	29	11	7				
EMIN FC	EAST	29	8	3				
ELGON	EAST	29	28	1				
BROAD PEAK	WEST	29	22	6				
ATLAS UNITED	WEST	29	15	9				

a. Create a workbook called **LEAGUE_RESULTS**   (1 Mark)

b. Using a customised **INPUT FORM**, enter the following data into a worksheet and format it exactly as it appears.   (10 Marks)

c. Set data validation criteria to ensure that matches won, drawn or lost do not exceed 29. A message **"INCORRECT!"** should be displayed in case the validation rule is violated.   (4 Marks)

d. d. Rename the worksheet as **LeagueTable**   (2 Marks)

e. Given that the total number of games played by each team in the season is 29, determine the number of games lost by each team.   (2 Marks)

f.   f. Calculate the points obtained by each team during the season given that: -   (3 Marks)

Results	Points
Win	3
Draw	1
Loss	0

g.   Determine each team's position in the league given that the team with the highest number of points becomes the first position in the league.   (4 Marks)

h.   Determine the number of teams that garnered above 55 points in the league. Label the cell appropriately.   (3 Marks)

i.   Given that teams get cash awards based on their positions according to the table below.

    Apply an appropriate formula to determine the team awards.   (4 Marks)

Team Position	Team Award
1	$ 1,000,000
2	$ 500,000
3	$ 250,000
4	$ 125,000
Others	$ 0

j.   Sort the data in ascending order by **Team Position.**   (1 Mark)

k.   Copy the worksheet **LeagueTable** to a new worksheet and rename it as **CountyTeams**

    (1 Mark)

l.   Using S*ubTotals* function in **CountyTeams** worksheet, determine the Average Points of all the teams in each county   (5 Marks)

m.   Using worksheet **LeagueTable** plot a column graph on its own worksheet renamed as

    LeagueAnalysis showing the TeamName and TeamPoints only.   (7 Marks)

n.   Print the following: (3 Marks)

    a.   Formulas only in **LeagueTable** worksheet

    b.   **CountyTeams** worksheet

    c.   **LeagueAnalysis** worksheet