NAME: ……..…….....

Combination				Personal №		

S850/1
Subsidiary ICT
Paper 1
Aug./Sept. 2024,
2 ½ hours

MATIGO EXAMINATIONS BOARD

Uganda Advanced Certificate of Examination

SUBSIDIARY ICT
Theory

Paper 1

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

Attempt all *questions in this paper*

The paper is made up of 20 equally weighted structured questions each carrying 5 marks

Write your answers in the spaces provided.

No additional materials (answer sheets) are provided

For Examiners' Use Only																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total

1. (a) In the modern world, every utility delivery company is switching from use analog systems to digital systems. Briefly explains the term digital migration. (02marks)

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(b) Why do you think there is a need for these companies to switch from analog systems to digital systems? (03 marks)

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2. (a) What are the roles of the following professionals according to their job description.

(i) ICT instructor (02 marks)

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(ii) System analyst (02 marks)

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(iii) Software engineer (01 mark)

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3. (a) Which laboratory equipments perform the following routine maintenance in the Computer laboratory? (05 marks)

(i) Regulates the room temperature.

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(ii) Protects user's sight from being damaged by strong light rays from the monitor.

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(iii) Regulates fluctuations in voltage.

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(iv) Control voltage spikes.

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(v) Provides alternative source of power when power goes off abruptly.

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4. (a) What is network topology? (01 mark)

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(b) A large company has a LAN. The manager of the company wants to replace it with WLAN. Explain the difference between a LAN and a WLAN, giving an advantage and disadvantage of a WLAN. (04 marks)

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5. (a) Distinguish between mechanical mice and cordless mice. (03 marks)

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(b) What are the three common key board layouts used today. (02 marks)

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6. Multi-national companies often use video conferencing rather than face to face meetings

(a) Give two advantages of video conferencing (02 marks)

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(b) Give three disadvantages of video conferencing (03 marks)

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7. **(a)** Differentiate between syntax and a language processor. (02 marks)

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(b) Identify **three examples** of the third generation language. *(3 marks)*

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8. (a) Explain what is meant by virtual reality. (02 marks)

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(b) Name three pieces of hardware used in virtual reality systems. (03 marks)

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9. Briefly explain the following terms used on the internet. (5 marks)

(a) Blog

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(b) Wiki

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(c) Instant messaging

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(d) Discussion group

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(e) E mail

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10. (a) Differentiate between asynchronous and synchronous transmission techniques (03 marks)

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(b)Identify the mode of transmission the following devices represent. (02 marks)

(i) Wakie talkie……

(ii) TV remote to TV set……..

11. (a) Define the concept of digital forensics (01 mark)

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(b) Identify the **three** branches of digtal forensics. (03marks)

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12. (a) Define an expert system in relation to the use of artificial intelligence. (02 marks)

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(b) State the role of the following components of an expert system. (03 marks)

(i) User interface

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(ii) Inference engine

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(iii) Knowledge base

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13. **(a)** Briefly explain the following rights that accrue to the creations of intellect .

(i) Patent rights (01 mark)

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(ii) Trade marks (01 mark)

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(ii) Trade secrets (02 marks)

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(b) Why do you think it is still a myth in Uganda to realize intellectual property rights implemented?

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14. (a) How does the **IPOS** cycle differ from the **machine cycle**? (02marks)

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(b) Briefly explain the following steps of the machine cycle (03 marks)

(i) Fetch

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(ii) Decode

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(iii) Execute

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15. (a) What are input devices? (01 marks)

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(b)Name the following input devices. (04 marks)

A 

B 

C 

D 

A……..……....

B……..……....

C……..……....

D……..……....

16. Briefly explain the following terms in relation to data communication.

(i) Domain name system (01 mark)

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(ii) IP address (01 mark)

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(iii) Web server (01 mark)

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(iv) Internet protocol (01 mark)

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17. **(a)** Differentiate between **data integrity** and **data redundancy**. (02 marks)

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(b)Identify the field properties that can effect the following settings below:

(i) Control the length of the text to be in put in a field

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(ii)Displays pre-defined format for the data to be entered in a field

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(iii) Specifies a pattern of all data to be entered in a particular field

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18. **(a)** Write the following computer abbreviations in full (02 marks)

(i) **USB**

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(ii) **UPS**

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(b) A parent is planning to produce a number of rules to ensure that his children follow which using a computer at home. Write down three rules that he could include in his list. (03 marks)

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19. Briefly identify **5** application programs known to you and state the use of each.

(05marks)

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20. A farmer has purchased a computerised milking system for her cows. She has asked a systems analyst to create a database to store details of the cow being milked.

Examples of the details of the cows which will be stored are:

Breed of cow	Date of birth	Weight of cow	Average milk yield	Animal Number
Holstein	25/02/2017	725.9	24.5	998/2017
Ayrshire	15/03/2016	715.0	20.1	972/2016
Jersey	25/02/2017	732.7	25.0	971/2016
Holstein	10/10/2016	715.0	25.0	765/2016

(a) State which field would be the most appropriate for the primary key?

(01 mark)

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(b) A validation check is used when entering the animal number into the database. Name and describe the most appropriate validation check that could be applied to this field. (02 marks)

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(c) Complete the following table by entering the most appropriate data type for each field. For any numeric field, specify the type of number. (02 marks)

Field Name	**Data Type**
Breed of cow	
Date of birth	

END