KASSU JOINT EXAM

- COMPUTER STUDIES -

451//1 (THEORY)

JUNE 2023 – 2 HOURS

Name:………………………..………………. Index Number:……………………

Candidate's Signature……………………………….. Date…………………..……………

Instruction to candidates

(a) *Write your name and index number in the spaces provided above*
(b) *Sign and write the date of examination in the spaces provided*
(c) *This paper consists of **two** sections: **A** and **B***
(d) *Answer all the questions in section **A***
(e) *Answer question **16** and other **three** questions from section **B***
(f) ***All** answers should be written in the spaces provided on the question paper.*
(g) ***This paper consists of 13 printed pages.***
(h) *Do not remove any pages from this booklet.*
(i) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
(j) ***Candidates should answer the questions in English.***

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	1-15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
	Total Score		

*Answer **all** the questions in this section in the spaces provided*

1. Give reasons why the following fire extinguishers are not recommended for use in the computer laboratory. (2 Marks)
   i. Liquid based

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ii. Powder based

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2. Differentiate between embedded and integrated computers (2 Marks)

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3. Describe the following terminologies as used in reference to visual display unit. (4 Marks)
   a. Resolution

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   b. Color depth

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4. Describe the following components of a spreadsheet: (3 Marks)
   a. Worksheet

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   b. Database

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c. Graphs

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5. a. State two threats to data and information.   (1 Mark)

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   b. List four types of risks posed by computer viruses to the computer systems.   (2 Marks)

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   c. State two measures against unauthorized access.   (2 Marks)

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6. Automated production is an effect of ICT on employment, state three advantages of automated production.   (3 Marks)
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7. Describe the following terms used in reference to the CPU: (3 Marks)
   a. Fetch

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   b. Decode

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c. Execute

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8. Explain three functions of an information system. (3 Marks)

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9. Describe the following terms as used in system development: (4 Marks)

   i. Control

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   ii. System entropy

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10. Define the term hot- swapping (1 Mark)

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11. State two functions of the power supply unit (2 Marks)

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12. Define peripheral device interfacing (2 Marks)

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13. Explain the following terms as used in the word processing. (2 Marks)

   i.   Footnote

………………………………………………………………………………………………………

………………………………………………………………………………………………………

   ii.   Endnote

………………………………………………………………………………………………………

………………………………………………………………………………………………………

14. a) Explain a situation when each of the following Desktop Publishing programs features may be used
    when creating a document (2 marks)

   (i)   Crop

………………………………………………………………………………………………………

………………………………………………………………………………………………………

   (ii)   Transparency

………………………………………………………………………………………………………

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15. Name any two types of non-printable guides in DTP. (2 Marks)

………………………………………………………………………………………………………

………………………………………………………………………………………………………

*Answer question **16** and any other **three** questions in this section in the spaces provided*

16. A program is expected to accept 10 numbers calculate their sum and average and produce the output. Below is a flowchart that was used by KASSU students to represent the program. Study the flowchart below and answer the questions that follow:

```
                    ┌─────────────┐
                    │    Start    │
                    └──────┬──────┘
                           │
                    ┌──────▼──────┐
                    │   Count=0   │
                    │   Sum=0     │
                    └──────┬──────┘
                           │
                    ┌──────▼──────┐
                    │  Input Num  │
                    └──────┬──────┘
                           │
                    ┌──────▼──────────┐
                    │  Sum=Sum+Num    │
                    │  Count + Count = 1 │
                    └──────┬──────────┘
                           │
          No        ╱──────▼──────╲
      ◄────────────◄  IF count=5  ╲
                     ╲             ╱
                      ╲───────────╱
                           │ Yes
                    ┌──────▼──────────┐
                    │ Average=Sum/count│
                    └──────┬──────────┘
                           │
                    ┌──────▼──────────┐
                    │ Print Sum, Average│
                    └──────┬──────────┘
                           │
                    ┌──────▼──────┐
                    │    Stop     │
                    └─────────────┘
```
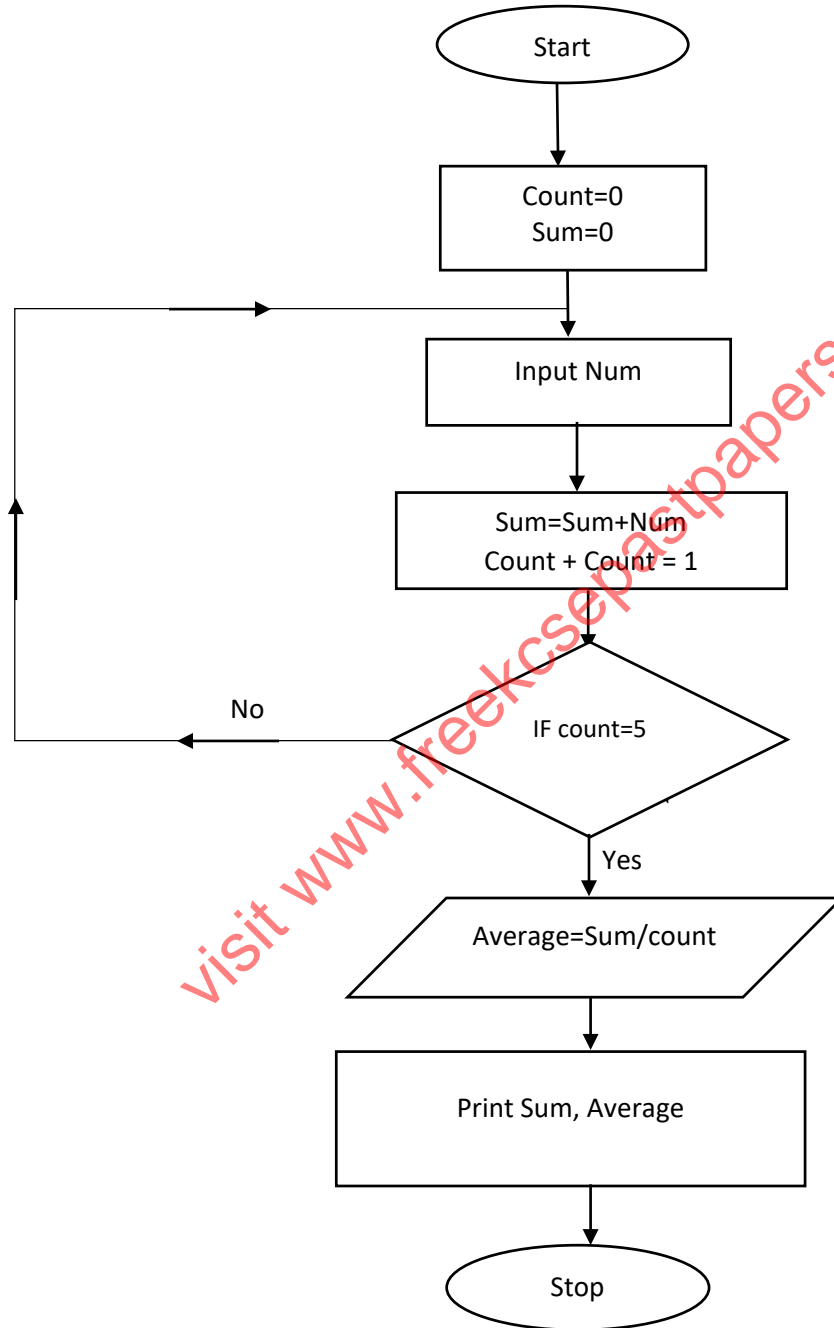
a) The flowchart has errors in it. Identify any four errors that were made in the flowchart stating how each of
    them should be corrected.   (4 marks)

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………
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b) Write a pseudocode for the corrected version of the above flowchart.   (7 marks)

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………………………………………………………………………………………………………

c) i) Give any two examples of fourth generation languages.   (2 Marks)

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ii) List two factors that need to be considered when selecting a programming language.   (2 marks)

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………

17. a) Outline two disadvantages of questionnaires as a data gathering techniques. (2 marks)

………………………………………………………………………………………………………
………………………………………………………………………………………………………

b) State three activities that take place during system implementation phase of SDLC. (3 marks)

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………………………………………………………………………………………………………
………………………………………………………………………………………………………
………………………………………………………………………………………………………

c) Define the term Feasibility study as used in system development. (1 mark)

………………………………………………………………………………………………………
………………………………………………………………………………………………………

d. Perform the following conversions

i. Convert 111.010_2 to decimal number. (3 marks)

ii. $17^4/_5$ (base 10)to binary (3 marks)

iii.   Distinguish between BCD and EBCDIC coding schemes   (2 mark)

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e. Give two reasons why a firm may decide to computerize its operations   (1 mark)

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18. a. Describe the following data types as used in spreadsheet.   (4 Marks)
    i.   Labels

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    ii.   Values

……

……

    iii.   Formulas

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    iv.   Range

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b. Differentiate between logical files and physical files.   (4 Marks)

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……

c. i. Define serial file organization (1 Mark)

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……

ii. Name any two disadvantages of serial file organization (2 Marks)

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

d. Give two advantages of using a template in a word processor (2 Marks)

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e. State two components found in an electronic Point-of-sale terminal. (2 Marks)

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……

19.a. Describe the following types of software (3 Marks)

i. Proprietary software

………

………

ii. Shareware

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iii. Freeware

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………

b. i, Define the term deadlock as used in operating system.   (1 Mark)

………

………

ii. The diagram shows five operating system functions and five descriptions. Draw a line between each operating system function and its description.   (4mks)

Function   Description

Interrupt	Many processes appear to run simultaneously

Utility	Data are temporarily held in a buffer waiting for an output device to access it

Memory Management	A signal that causes the operating system to take a specified action

Spooling	A program that performs a specific task required for the operation of a computer system

Multitasking	A process of assigning blocks of memory to programs running in a computer

c. Satellite navigation systems are used to give the vehicle driver directions.
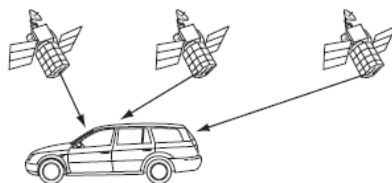
   i. How does the system know the exact position of the vehicle?   (3 Marks)

………

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………

ii.   Give two advantages to the driver using this system.   (2 Marks)

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………
………

iii. Give two problems associated with satellite navigation systems.   (2 Marks)

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………

20. a. Define the following terms

i. Trouble shooting   (2 Marks)

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………
………

ii. Installation

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………

 b. Describe any two types of files used in operating systems.   (2 Marks)

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………

c. A database table, DEVICE, has been set up to record the electronic equipment used in a small
business

Device ID	Device Type	User	Purchase Date	Purchase Price ($)	Portable
3	Desktop	Alan Swales	14/02/2017	1350.00	N
4	Laptop	Chantel Law	01/02/2016	1460.00	Y
5	Tablet	Abdula Saud	31/12/2016	1000.00	Y
6	Desktop	Abdula Saud	14/03/2017	1000.00	N
7	Laptop	Alan Swales	15/03/2016	1700.00	Y
8	Tablet	Taona Jaji	16/12/2016	470.00	Y

(a) The query-by-example grid below selects certain records.

Field:	User	Portable	Purchase Price ($)
Table:	DEVICE	DEVICE	DEVICE
Sort:	Ascending		
Show:	✓	☐	☐
Criteria:		Y	>1000
or:			

Show what would be the output from the query-by-example. (2 Marks)

……

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(b) Complete the query-by-example grid below to select all Desktop devices that were either purchased before 31/12/2016 or cost under $1000. Only show the Device ID and Device Type.

(5 Marks)

Field:	Device ID	Device Type	Purchase Date	Purchase Price
Table:	DEVICE	DEVICE	DEVICE	DEVICE
Sort:				
Show:				
Criteria:				
Or:				

c. Differentiate between a primary key and an index key (2 Marks)

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d. State the title of the ICT personnel in charge of regularly updating the organization's website.

(1 Mark)

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e. What program is the personnel above likely to use to accomplish his tasks? (1 Mark)

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