# 451/1 – COMPUTER STUDIES – PAPER 1

## (THEORY)
## MAY/JUN 2022 - 2½ hours

Name: …………………………………………….. Index No. …………………………/ ……

Signature: …………………………………………... Date: ……………………………………..

# FLASH 2022 JOINT EVALUATION

## Kenya Certificate of Secondary Education
## May/June 2022

**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 13 printed pages.**
(g)    Do **not** remove any pages from this booklet.
**(h)    Candidates should check to ensure that all pages are printed as indicated and no questions are missing.**
**(i)    Candidates should answer the questions in English.**

### FOR EXAMINER'S USE ONLY

| Section | Questions | Candidate's score |
|---------|-----------|-------------------|
| A | 1 – 15 | |
| B | 16 | |
| | 17 | |
| | 18 | |
| | 19 | |
| | 20 | |
| | TOTAL SCORE | |

## SECTION A

### Answer all questions in this section

1. Mr Kevin Osuka came across the following examples of software while revising for her computer studies exam: *Linux, Sage, Microsoft Word, Windows 10,* **Classify** each as either system software or application software. (2 marks)

   *Linux*

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   *Sage*

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   *Microsoft Word*

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   *Windows 10*

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2. **Distinguish** between *primary memory* and *secondary memory* as used in computers.

   **(2marks)**

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3. Rondo Retreat is a hotel in Kakamega Forest. The staff of the hotel encourages their customers to pay their bills using money transfer services. State **four** advantages of making payments through a mobile phone. (4marks)

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**4.** Distinguish between text wrap and word wrap as used in word processing. (2marks)

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**5.** a) Define a function as used in spreadsheets. (1mark)

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b) A student in Mulanda Sec school typed a function to calculate the sum of some two values. He wanted to apply the function to other cells, state **two** ways of applying.

(2marks)

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**6.** Sarah noticed that after copying a video file in her flash disk from a cyber café in town, the video file self-replicated in the flash disk filling all the available memory space.

a) State one possible cause of such an occurrence. (1mark)

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b) **State two** ways that can be used to prevent the occurrence of such incidences.

(2 marks)

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**7.** a) Define the term network. (1mark)

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b) State **three** examples of networks. (2marks)

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**8.** Using BCD coding scheme, find the representation of the following numbers. (4marks)

a) 87

b) 26

**9.** Write the following acronyms in full. (3marks)

a) STP

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b) ASCII

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c) MODEM

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**10.** Define the following terms as used in networking. (2marks)

a) Attenuation

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b) Multiplexing

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**11.** State **two** limitations of computer networking. (2 marks)

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**12.** a) Define the term mail merging. (1mark)

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b) State **three** files involved during mail merging. (3marks)

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**13.** Data collection is one of the stages during data processing. State two ways of collecting

data. (1mark)

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**14.** Kaptik Secondary school would like to introduce the use of internet in the school's

computer lab. **Explain three** security issues that the students are likely to be exposed to.

(3marks)

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**15.** State **two** advantages of pilot running as opposed to direct changeover strategy in system

development. (2marks)

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*Answer questions 16 (Compulsory) and any other three questions from this section*
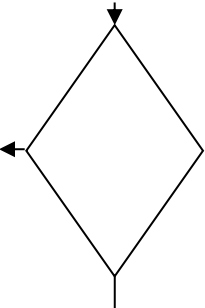
**16. a) i)** Define the term program flowchart. **(1mk)**

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**ii)** Name the following flowchart symbols;

**a).** ◯ ……………………………………………………………………… **(1mk)**

**b).**

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**c).** ……………………………………………………………………….. **(1mk)**

**d).** ……………………………………………………………………………………..**(1mk)**

**b)** Name **three** categories of control structures used in programming. **(3mks)**

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**c)** Give **two** guidelines for designing a good pseudocode. **(2mks)**

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**d)** Give the names of the following control structures depicted below.　　　　**(2mks)**
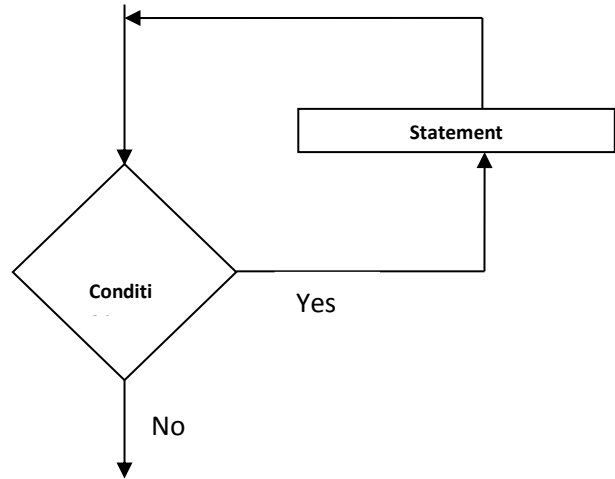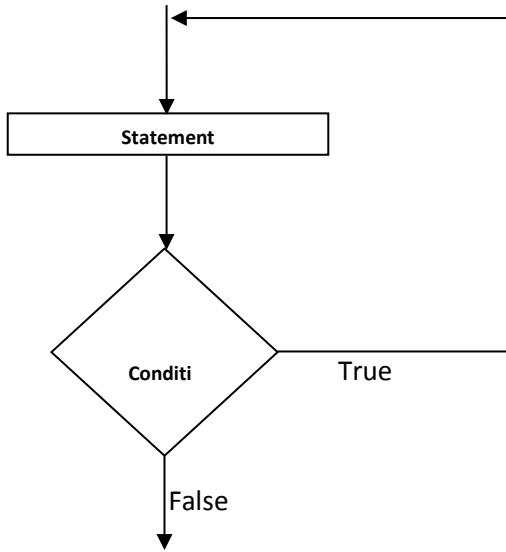


i)………………………………..　　　　ii)…………………………………

**e)** What will be the output of the following flowchart?　　　　**(3mks)**
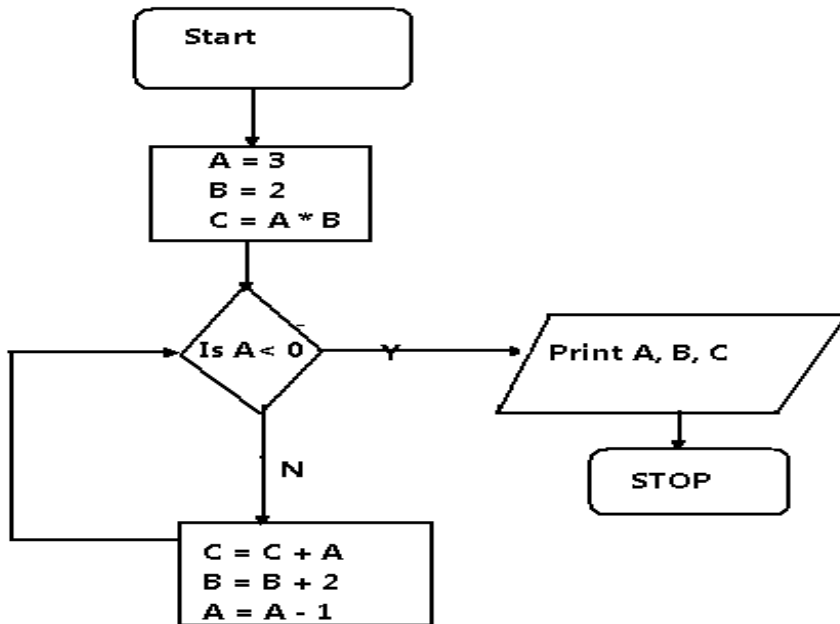
**A:**……………………………………………………………………………………………..

**B:**……………………………………………………………………………………………..

**C:**……………………………………………………………………………………………..

**NB:** *Show your working clearly.*

**17.** (a) A tourist from Netherlands wants to book for an air ticket from Kenya Airways.

    i.     Identify a processing mode involved in that transaction. (1mk)

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    ii.    Give **two** other areas in which the above data processing mode can be used.

(2mks)

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    iii.   Apart from the data processing mode above, give any other **two** modes of data processing. (1mk)

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(b)     Give **two** reasons why data and information in a computer system needs to be converted to other number systems other than binary. (2mks)

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(c)  Using ones complement, subtract 17 from 28. (4mks)

(d)  Convert $13.125_{10}$ to Binary number system. (2mks)

(e)  During manual data entry, the data entry clerks need to verify and validate their data to ensure that it is free from errors. Define the term error as used in this context.  (1 mark)

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(f)  In an exam, where the subject marks for each student was summed and the mean calculated from the sum, the students realized that their marks were inaccurate by a fraction of the mean mark. Likewise, a great difference between the actual class mean and the sum of the recorded mean mark. Describe **any two** types of errors that may have caused the difference between the recorded mean marks and the actual mean marks. (2 marks)

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**18.** a) An ICT technician advised the secretary of hypertech company to install operating system in her laptop. What is an operating system? (1mark)?

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b) Why was the operating system important in the laptop. (4marks)

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(c). Explain 3 factors that the technician was to put in mind before choosing an operating system for use in the laptop (3 mks)

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(d) (i) Mr. Amutu a software developer always develops portable software. What is software portability? (1mks)

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(ii) A firm intends to purchase new software. List three items of documentation that should accompany the software (3mks)

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(e) Most organizations are using in- house developed software for the processing activities rather than use of standard software

(i) What is in- house developed software? (1mk)

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(ii) Give two reasons that may be influencing these organizations for such a decision (2 mks)

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**19.** a) An organization intends to replace an existing system by carrying out the process in stages.

i).     Name this implementation strategy.                                    (1 mark)

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ii).     Give **two** reasons why the organization is opting to use the implementation strategy in (a) above                                                                                   (2 marks)

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b) State a stage in systems development life cycle where each of the following activities are carried out:

i).  identifying the technologies that may be used in a proposed system; (1 mark)

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ii).  identifying shortcomings of a system;                                    (1 mark)

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iii).  preparing the system migration plan.                                    (1 mark)

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c) Study the follow flowchart then answer the questions that flow.
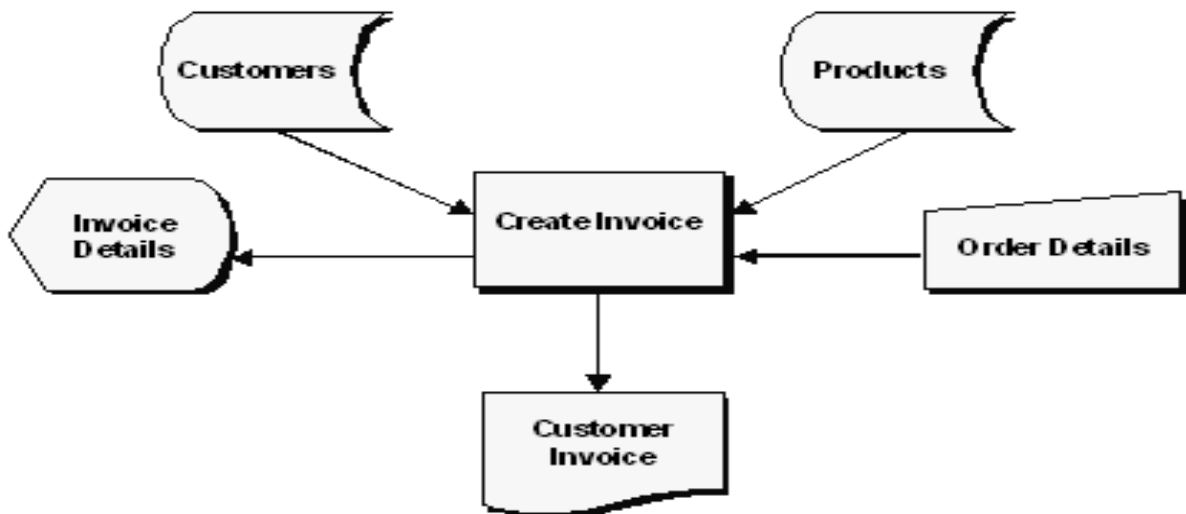
i).    Identify the type of flowchart that is represented by the flowchart above (½mark)

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ii).    Name all the flowchart symbols used in this flowchart.                    (½mark)

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d) Table 1 and Table 2 are related tables in a database. Use them to answer the questions that follow.

**Table 1**

| Dept Code | Dept Name |
|-----------|-------------|
| 001 | Computer |
| 002 | Aviation |
| 003 | Engineering |

**Table 2**

| Dept ID | Students Registration No. | Students Name |
|---------|---------------------------|----------------|
| 002 | st1 | Alex Toro |
| 003 | st2 | Naomi Komi |
| 002 | st3 | Peter Kengo |

i).   Identify the appropriate primary key for each table.                    (2 mark)

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ii).  Explain two benefits of enforcing referential integrity in the database. (4 marks)

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**20.** a). What is meant by the term tele-commuting? (1mk)

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b). An organization intends to install tele-commuting in its operations. List *THREE*

disadvantages that are likely to be encountered. (3mks)

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c)  (i)  What is data privacy? (1mk)

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ii). Give *two* provisions of the Data Protection Act of 1984 regarding personal data.

(2mks)

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d). Explain the following terms as applied in internet communication.

i). Search Engine. (1mk)

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ii). Uniform Resource Locator (URL) (1mk)

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iii) Domain name (1mk)

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(e) Identify 3 ways in which a farmer can use ICT to improve his farming.              (3mks)

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(f) Label the parts of the following email address.

<div align="center">nyakio@mmust.ac.ke              (2mks)</div>

<div align="center">↑        ↑</div>

<div align="center">(i)      (ii)</div>

(i)................................................................................................................................................

(ii)................................................................................................................................................