



FOCUS A365
A M A N Y A M F R A N C I S E . C O M P R O D U C T I O N

451/1 - COMPUTER STUDIES – Paper 1
(THEORY)
June. 2022 – 2½

Name.....Index Number.....

Candidates Signature..... Date.....Class:

Instruction to candidates

- a) Write your name and index number in the space provided above.
- b) Sign and write the date of examination in the spaces provided above.
- c) This paper consists of **two** sections **A** and **B**.
- d) Answer **all** the questions in section **A**.
- e) Answer question **16** and any other **three** questions from section **B**.
- f) All answers should be written in the space provided in the question paper.
- g) **This paper consists of 15 printed pages.**
- h) **Do not remove and 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 Number	Candidate's Score
A	1-15	
B	16	
	17	
	18	
	19	
	20	
Total		

SECTION A

1. Define the term computer era (1 Mark)

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2. Describe each of the following types of computers (1 mark)

a) Hybrid

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b) Embedded (1 mark)

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3. Discuss how humidity can be controlled in the computer lab (2 marks)

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4. (a) Describe the mouse techniques listed below (1 Mark)

(i) Drag and drop

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(ii) Right clicking (1 Mark)

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b. Define the terms the terms listed below

(1 Mark)

(i) POST

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(ii) BIOS

(1 Mark)

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5. (a) state two limitations of entering data into a computer system using a touch sensitive input device .

(2 marks)

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6. With an aid of a diagram describe how a computer executes an instruction

(4 marks)

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(b) State three circumstances under which voice input would be preferred over other method of data capture. (3 marks)

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7. As Brik was working in his computer, he realized that the program he was running used more memory than the available memory in his computer. Identify the extra memory used by the program and where it is located. (1 Mark)

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8. State the meaning of the term plotter. (2 marks)

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9. State three Factors to consider when choosing a secondary storage device (3 marks)

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10. Distinguish between a software suite and integrated software (2 Marks)

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11. State how an operating system handles the following in a computer system

(a) Errors (1 mark)

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(b) Interrupt (1 mark)

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12. State functions of the following OSI layers

a) Session (1 mark)

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b) Network (1 mark)

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c) Physical layer (1 mark)

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13. During database construction, it is necessary to consider field properties for each table field. With relevant examples, state the functions of the field properties listed below.

a. Field size (1mark)

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b. Required (1mark)

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c. Input Mask

(1mark)

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14. a) Differentiate between Bcc and Cc as used in emails.

(2 marks)

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b) Explain briefly off-line processing mode.

(3 marks)

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15. In relation to DTP, state the purpose of frames.

(1 mark)

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SECTION B

16 (a) Briefly explain the following Object Oriented Programming (OOP) concepts.

i) Objects (2 marks)

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ii) Encapsulation (2 marks)

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b) A computer program is required which inputs 10 numbers, multiplies them together and finally outputs the answer (the product). The following algorithm has been written to do this.

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count = 0
product = 0
while count <= 10 do
    input number
    product = product * number
    count = count + 1
    print product
endwhile
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(i) There are three errors in the algorithm. Locate and describe these errors. (6marks)

error 1:

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error 2:

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error 3:

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(ii) Draw a flowchart for the correct pseudocode

(5marks)

17. a) A supermarket uses a computer system which operates in both batch mode and real time transaction mode.

(i) State two task which could use batch processing.

(2 marks)

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(ii) State two task which must be done in real time mode.

(2 marks)

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b) State **three** ways in which data loses integrity in an information system (3 marks)

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c) A school keeps a spreadsheet of examination results in four subjects. Part of the spreadsheet is shown below.

	A	B	C	D	E	F	G	H
1	Name	Class	Maths	Science	IT	English	Average Mark	Pass/Fail
2	Allen	11A	33	24	19	44	30	
3	Dyos	11B	41	54	70	31	49	
4	Kegg	11A	82	69	57	52	65	
5	Khan	11C	44	21	50	85	50	
6	Kolacz	11A	73	51	73	51	62	
7	Lenski	11B	17	41	40	34	33	
8	Peruza	11C	87	72	64	61	71	

(i) Which column has been used to sort the data? (1 mark)

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(ii) What formula has been entered in cell G2 to calculate Allen's average mark? (1mark)

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(iii) The IT results need to be sorted so that the highest mark is at the top. Describe how this sort could be done. (2 marks)

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(iv) A formula is entered in cell H5, "Pass" appeared as output. What formula has been entered? (2 mark)

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(v) State the validation check that should be carried out on data entered in cells C2 to F8 to ensure values over 100 are not input. (1 mark)

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(vi) The school has kept the spreadsheets of all the examination results for the last five years. What feature of the spreadsheet software would allow the results to be easily compared? (1 mark)

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18. a) In what **three** ways could an expert system help a doctor to diagnose illnesses. (3 marks)

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b) A coffee pot is to be designed using a computer-aided design (CAD) program. State **two** benefits of using a CAD program to do this. (2 marks)

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c) Computer technology has now allowed employees to work from home. (i) state **one** advantage to employers of allowing employees to work from home. (1 mark)

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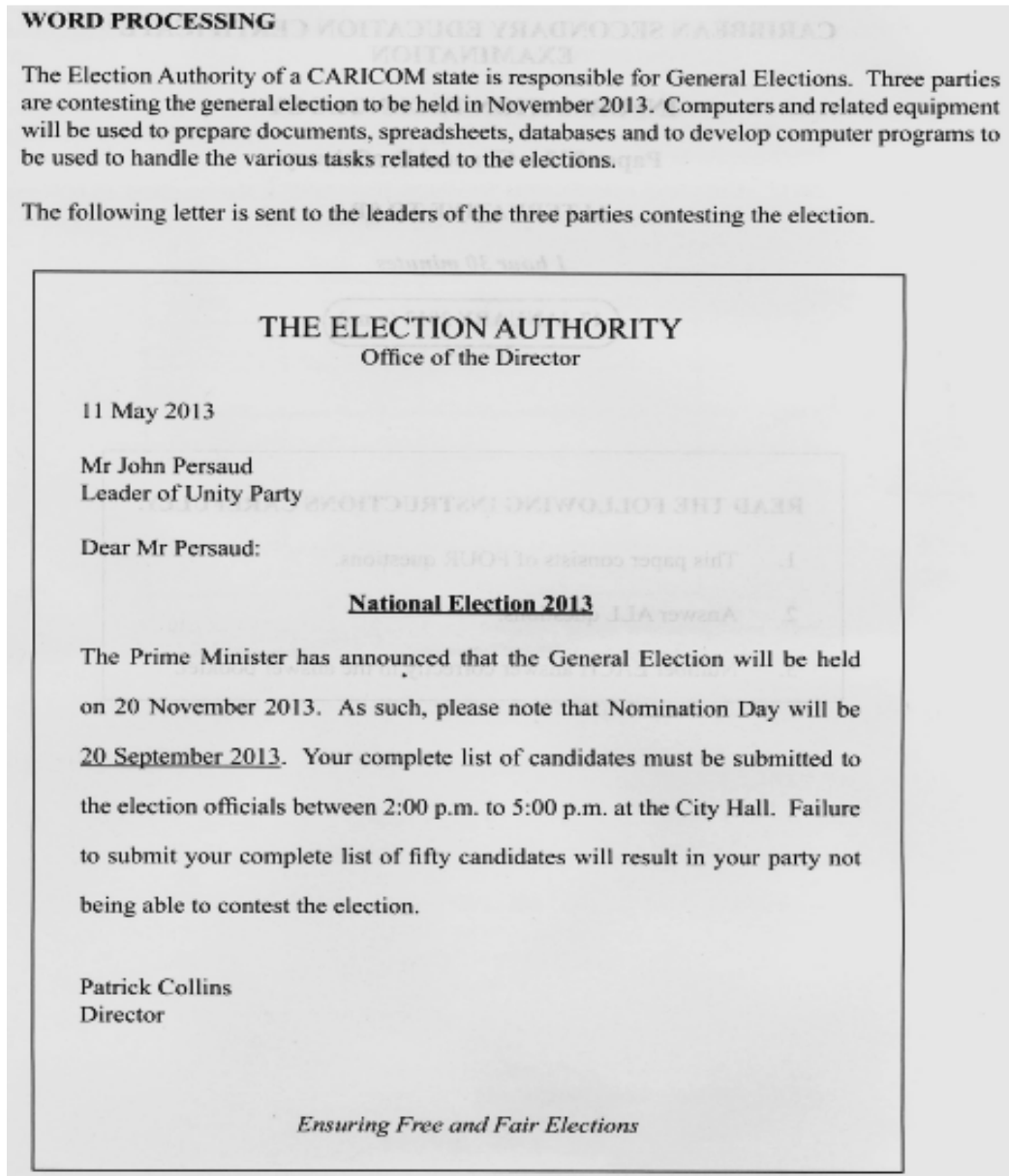
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(ii) Describe **two** advances in computer technology which have allowed working from home to become possible. (2 marks)

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d) A school secretary used a word processor program to prepare a document as shown below.



a) State the line spacing and justification that have been applied to the text in the body of the letter. (2 marks)

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c. State any **three** advantages of twisted pair cable

(3 Marks)

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d. Using eight bit two's complement to perform the calculation below leaving your answer
in decimal number $13_{10} - 38_{10}$

(4 Marks)

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e. Convert 257_8 to its equivalent Hexadecimal number

(2 Marks)

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20. (a) Explain how data in a computer system can be secured using:

(i) Password (2 marks)

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(ii) Audit trail (2 marks)

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(iii) Firewall (2 marks)

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(b) A manager in XYZ Company wishes to replace the current manual system with a computerized one in an organisation.

(i) Explain the reasons for conducting the following activities in system implementation stage.

a) Staff training (2 marks)

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b) File conversion (2 marks)

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(ii) State three factors to be considered in input requirements specifications stage.(3 marks)

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a) State two circumstances under which the manager may opt to use phased changeover strategy when introducing the system into the organisation. (2 marks)

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