

451/1 - COMPUTER STUDIES - Paper 1
(THEORY)
Nov. 2018 - 2½ hours

Name Index Number

Candidate's Signature Date

Instructions 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 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 spaces provided on the question paper.
- (g) **This paper consists of 16 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	
		15	
		15	
		15	
Total Score			



SECTION A (40 marks)

*Answer **all** questions in this section.*

1. State **two** reasons for the increased use of laptop computers in government offices. (2 marks)

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2. Computer network technicians prefer to use command-line based operating system when configuring networks. State **three** reasons for the preference. (3 marks)

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3. State **three** measures that should be put in place in a computer laboratory to safeguard users' health. (3 marks)

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4. State **three** ways in which barcode readers may be used in schools. (3 marks)

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5. State **three** advantage of flat panel monitors over cathode ray tube monitors as used in computers. (3 marks)

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6. State **three** possible reasons for the extinction of daisy wheel printers in the market. (3 marks)

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7. State **three** ways in which an operating system secures a computer system. (3 mark)

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8. A law firm prefers to use hard copy output over soft copy output when handling documents for legal matters. State **two** reasons for this preference. (2 marks)

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9. State the function of each of the following features in a word processor application:

(a) Thesaurus; (1 mark)

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(b) Comments. (1 mark)

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10. With the aid of an example, explain the term *multi-level list* as used in word processing. (3 marks)

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11. Distinguish between real-time operating system and distributed operating system. (3 marks)

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12. Explain the function of *protect sheet* feature in a spreadsheet program. (2 marks)

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13. State **four** computer-based careers introduced as a result of computerised data processing method at the airport. (2 marks)

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14. In a spreadsheet, the formula =If(A1>10, A1*77, A1*50) is entered in a cell. Interpret the results. (3 marks)

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

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

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

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

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SECTION B (60 marks)

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

- 16. (a) With the aid of a flow chart, describe a *loop control structure* as used in programming. (4 marks)

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- (b) Study the following pseudocode and answer the questions that follow.

1. Start
2. Get value1 and value2
3. If value1 > value2 Then
4. Maximum = value1
5. Else If value1 < value2 Then
6. Maximum = value2
8. Else Go to 9
9. Display Maximum
10. Stop

- (i) State the purpose of the pseudocode. (1 mark)

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(ii) Draw a flowchart equivalent to the pseudocode.

(6 marks)

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(c) Distinguish between a *source program* and a *compiler* as used in computer programming. (4 marks)

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17. (a) (i) Explain the term *search engine* as used in the Internet. (2 marks)

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(ii) Peter intends to download a movie from the Internet. State the **three** factors that may determine the total time taken to complete the download. (3 marks)

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- (b) Wakulima online is an organisation that runs a web based system for assisting farmers to obtain market for their farm produce. State **four** technological reasons that may cause a farmer not to access the organisation’s system. (4 marks)

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- (c) Explain a situation when each of the following Desktop Publishing program features may be used when creating a publication:

- (i) cropping; (2 marks)

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- (ii) transparency. (2 marks)

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- (d) List **two** areas where infrared waves are used in data communication. (2 marks)

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18. (a) State **four** activities of the planning stage of systems development. (4 marks)

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(b) Explain a circumstance when each of the following feasibility studies are carried out during systems development:

(i) Technical; (2 marks)

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(ii) Economic; (2 marks)

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(iii) Schedule. (2 marks)

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- (c) **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

DeptID	Student Registration No.	Student's Name
002	St01	Alex Toro
003	St02	Naomi Komi
002	St03	Peter Kengo

- (i) Identify the appropriate primary key for each table. (1 mark)

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- (iii) Explain **two** benefits of enforcing referential integrity in the database. (4 marks)

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- 19. (a) Describe each of the following validation checks as used in data processing:

- (i) Preserve check; (2 marks)

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(ii) Data type check; (2 marks)

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(iii) Check digit. (2 marks)

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(b) Write each of the following abbreviations in full:

(i) BCD; (1 mark)

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(ii) EBCD; (1 mark)

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(iii) ASCII. (1 mark)

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- (c) Using 10 – bits binary number system, perform the following decimal operation using two’s complement (6 marks)

$$129_{10} - 128_{10}$$

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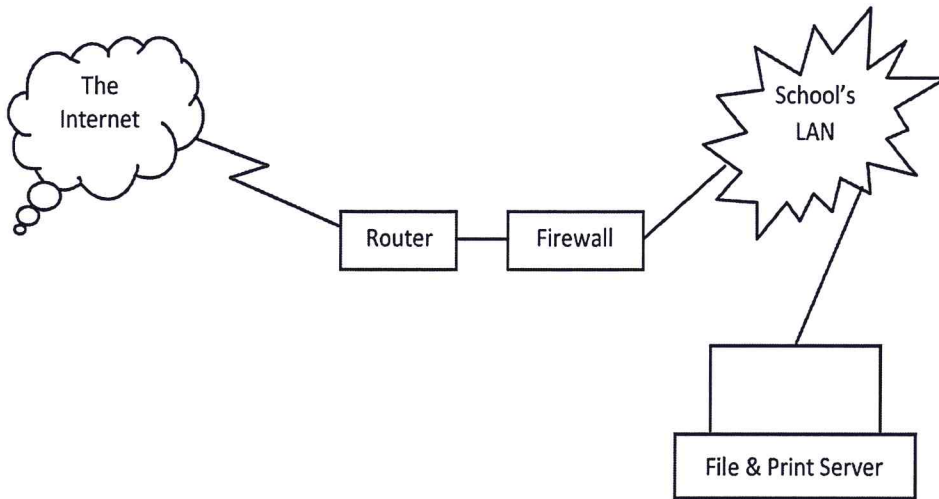
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20. (a) The figure shows a network design. Use it to answer the questions that follow.



(i) Explain the function of each of the following in the network.

I Router; (2 marks)

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II Firewall; (2 marks)

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III File server. (2 marks)

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(ii) State **two** categories of software that must be installed in a computer so that users can use it to access the internet. (2 marks)

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(b) State **four** ways in which computers may be used to manage data in a research environment. (4 marks)

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(c) Some computer companies have opted to use the Internet to provide shared processing resources and online application services to users. State **three** advantages that this approach will have on their customers. (3 marks)

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