451/1 – COMPUTER STUDIES – Paper 1
(THEORY)
Nov. 2017 – 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 in the question paper.
(g) **This paper consists of 14 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 Number	Candidate's Score
A	1–15	
B	16	
	17	
	18	
	19	
	20	
	Total Score	

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SECTION A

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

1.   State the meaning of the term **computer software**.   (2 marks)

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2.   State **three** features of fifth generation computers.   (3 marks)

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3.   Differentiate between **home page** and **web page** as used in the Internet.   (2 marks)

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4. State **three** characteristics of mainframe computers. (3 marks)

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5. The management of an organisation intends to purchase a printer. State **three** factors that they should consider during the purchase (3 marks)

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6. Describe each of the following computer cables:

    (a) Parallel cable; (2 marks)

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    (b) Serial cable; (2 marks)

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7. A computer technician has observed a lot of dust on computers in the computer laboratory. State **three** precautions that need to be put in place to avoid this. (3 marks)

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8. Explain the term **proofreading** as used in word processing. (2 marks)

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9. State the function of each of the following computer keyboard keys when using a word processor:

(a) End (1 mark)

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(b) Insert (1 mark)

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(c) Backspace. (1 mark)

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10. Explain **two** problems associated with the computer hard disk. (4 marks)

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11. State the spreadsheet function that can be used to obtain each of the following values in a worksheet:

(a) Number of cells with values in a column. (1 mark)

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(b) Mean of values in a range of cells. (1 mark)

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12. A school intends to install wireless media in their communication system. State **three** advantages of this mode of communication media. (3 marks)

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13. State **two** ways in which one can create a password which cannot be easily accessed by hackers. (2 marks)

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14. State **two** ways through which a computer user can minimise Repetitive Strain Injuries (RSI) associated with the use of a computer. (2 marks)

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15. Identify **four** tasks that can be achieved using a Desktop Publishing programme from the following list of tasks. (2 marks)

I.   Managing students records in a school
II.   Creating a calendar
III.   Designing a building structure
IV.   Creating a banner
V.   Creating a book cover
VI.   Processing of examination results
VII.   Creating business cards

SECTION B

*Answer question 16 and any other **three** questions from this section.*

16.   (a)   State **two** qualities of a good pseudocode.   (2 marks)

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(b)   With the aid of flowchart diagrams, describe each of the following programme control structures:

(i)   sequence   (3 marks)

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(ii)   selection   (3 marks)

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(c)   Draw a programme flowchart that would accept three numbers and find their sum. If the sum is greater than 200. It adds 30 to the sum, otherwise subtracts 20 from the sum. The programme should then display the results.   (7 marks)

17. (a) Describe **three** arithmetic errors that may occur during computerised data processing.

(6 marks)

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(b) Arnold a programmer intends to create a user input interface screen for a system. State **three** factors that he should consider. (3 marks)

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(c) With the aid of an example in each case describe the following types of maintenance.

(i) adaptive; (2 marks)

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(ii) perfective; (2 marks)

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(iii)   corrective.   (2 marks)

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18.   (a)   Distinguish between a **microwave transmission** and a **radio transmission**.   (4 marks)

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(b)   **Figure 1** shows a computer, network topology. Use it to answer the questions that follow.
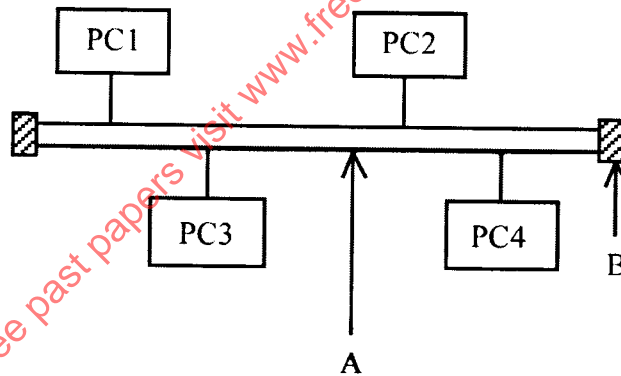
Figure 1

(i)   Identify the type of topology.   (1 mark)

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(ii) State the function of each of the parts labelled A and B. (4 marks)

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(c) A computer laboratory experiences power supply problems. Describe **three** power related problems that should be addressed. (6 marks)

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19. (a) A school has been advised to employ a database administrator. State **three** responsibilities of this personnel in the school. (3 marks)

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Turn over

(b) Explain **two** ways in which computers can be used in the transport industry. (4 marks)

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(c) Mary was advised to partition a hard disk for her computer. Explain **two** reasons that may have necessitated this. (4 marks)

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(d) Explain a reason for conducting each of the following studies in systems development:

(i) Schedule feasibility; (2 marks)

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(ii) Technical feasibility. (2 marks)

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20. (a) Explain **three** functions of an information system in an organisation. (6 marks)

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(b) Explain **two** benefits that a company would gain from using batch processing method for data processing (4 marks)

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(c) (i) Convert the number 11101.11_2 to its decimal equivalent. (3 marks)

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(ii) Perform the following binary operation $11011_2 + 101_2$ (2 marks)

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