

451/1 - COMPUTER STUDIES – Paper 1
(THEORY)
June. 2022 – 2 Hours

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

Candidates Signature..... Date.....

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. Briefly describe **three** roles of a database administrator (3marks)

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2. State **two** situations in which bar-code scanner may be useful as a method of data entry (2marks)

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3. State two reasons why floppy disks are not commonly used as computer data storage medium today. (2 marks)

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4. Differentiate between the following information communication technology concepts.
a) Bits and Bytes (2marks)

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b) System file and System unit

(2marks)

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5. Interpret each of the following spreadsheet errors.

(a) #####! Error

(1mark)

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(b) #Null! Error

(1mark)

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(c) #Value! Error

(1mark)

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6. State **four** advantages of using computer-based simulation when training surgeons (4marks)

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7. State the function of the following registers

i. Instruction register. (1mark)

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ii. Address register (1mark)

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iii. Storage register (1mark)

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8. a) State **two** advantages of New Technology File system (NTFS) (2marks)

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b) State **one** reason for partitioning a disk (1mark)

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9. A school intends to purchase new computer to be used by students in the computer laboratory. State **two** circumstances which may dictate the type of output devices to be purchased. (2marks)

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10. State **two** ways on how information and Communication Technology (ICT) can be used to reduce the spread of Covid-19 (2marks)

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11. a) What you understand by the term normalization as used in databases (1mark)

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b) State **two** objectives of normalization. (2marks)

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12. State the circumstance under which each of the following options could be the most applicable during windows operating system installation.

a) Upgrade (1mark)

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b) Repair (1mark)

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13. Joseph, a data entry clerk, realized that all the active tasks on his computer system were deadlocked, outline **one** approach he could employ to recover from this situation (1mark)

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14. a) Differentiate between freeware and shareware software

(2marks)

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b). Explain one reason why parallel cables are faster than serial cables in data transmission. (1mark)

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15. A computer student entered a number as **3i5** instead of **315** in a database table.

(a) State the type of error.

(1mark)

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(b) State **two** ways of minimizing the error above.

(2marks)

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SECTION B

16 a i) Outline **two** circumstances that would make a programmer to use structured programming language when writing a program (2marks)

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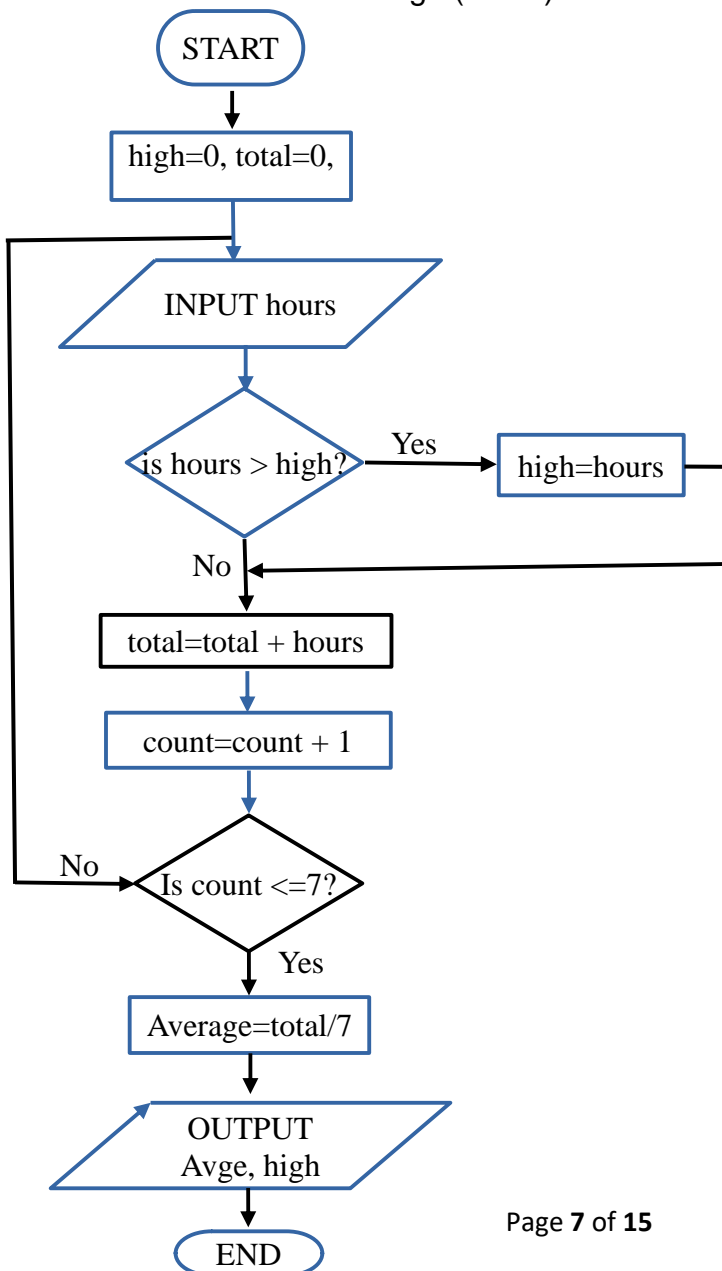
ii) Outline two advantages of high-level language (2marks)

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b) This flowchart inputs number of hours sunshine each day over a 7 day week. It outputs the highest value recorded and the average (mean) number of hours sunshine per day.



Identify the errors in the flowchart and suggest possible solution

(6marks)

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c) Write a pseudocode for the above flowchart without errors

(7marks)

17. Distinguish between Blogs and Portals as used in the internet

(2marks)

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b) With aid of a diagram, describe the structure of a coaxial cable

(4marks)

c) Explain each of the following terms as used in the internet

i) Bookmark

(2marks)

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ii) Hyperlink

(2marks)

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d) Outline **two** factors that should be considered when selecting a Network switch, other than cost

(2marks)

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e) i) Differentiate between star and hybrid network topologies

(2marks)

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ii) Other than the normal functions of Operating System, What is the main function of network operating system

(1mark)

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18.i) Define a Master Page

(1mark)

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ii) Explain the importance of designing a publication using Master pages.

(2marks)

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iii) List **two** techniques of acquiring electronic images to be used in a DTP program (1mark)

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iv) Why is DTP Software considered superior in designing a publication as compared to the word processor?

(2marks)

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b) State the functions of each of the data processing files

i) Reference

(1mark)

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ii) Transaction

(1mark)

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c) With an aid of a diagram describe timesharing data processing mode (4marks)

d) State three circumstances that may make data loss its integrity (3marks)

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19. (a) Convert each of the following decimal numbers to binary equivalent showing the sign bit.

(i) $+23_{10}$ (2marks)

(ii) -27_{10} (2marks)

(b) Using 6-bit ones complement perform the binary operation: $11111_2 - 10001_2$, and convert the answer to decimal notation. (4marks)

(c) Computer network technician prefer to use operating system shown below when configuring networks. Study and use it to answer questions that follow.

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Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping 172.1.16.10

Pinging 172.1.16.10 with 32 bytes of data:
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.

Ping statistics for 172.1.16.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Administrator>exit
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i) Identify the type of operating system above depicted above. (1mark)

ii) Explain **three** limitations of the operating system depicted above when configuring networks. (6 marks)

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20. a) Lisa a form four student was typing her computer studies project using Microsoft word. She clicked on the view menu and saw the following documents views. State the uses of the following views.

i) Print layout (1mark)

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ii) Web layout (1mark)

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iii) Page layout (1mark)

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TWO MEANINGS OF THE TERM WORM IN COMPUTING

In computing the term Worm has two meanings. The reader has to be careful in distinguishing between the two by not only basing on experience but also looking at the context in which they are used.

1. As software, a computer worm is a type of *virus* that replicates itself, but does not alter any files on your machine. However, worms can still cause havoc by multiplying so many times that they take up your entire computer's available memory or hard disk space.
2. In storage: It is an optical storage technology that allows a **disc** to be written only once but read an unlimited number of times.

b) Citing examples, identify three formatting features used in the above passage. (3marks)

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c) At what stage in the system development life cycle does the following activities take place?
i) Determining how cost effective a system is? (1mark)

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ii) Carrying out interviews.

(1 mark)

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iii) Replacing an old system with a new one

(1 mark)

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d) User manual is designed to help a person use a system with as little guidance as possible.

Outline any **three** kinds of information that it must contain.

(3marks)

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e) System analyst uses variety of tools to design a system. State **three** examples of these tools.

(3marks)

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