

SECTION A (15 MARKS)

Answer all questions in this section.

1. For each of the following items (i) - (x), choose the most correct answer and write its letter beside its item number in the space provided.

(i) A school uses computers to prepare students' examination results, store their records and print reports. Which field/application of Computer Science is BEST represented by this use?

- A. Computer-aided design
- ~~B.~~ Education and school administration
- C. Computer gaming
- D. Weather forecasting

(ii) A hospital needs a computer that can process a very large number of transactions and support many users at the same time. Which classification of computer is MOST suitable?

- A. Supercomputer
- B. Mainframe computer
- C. Tablet computer
- D. Microcomputer

(iii) A student is instructed to carry a desktop computer safely from one laboratory desk to another. Which practice is MOST appropriate?

- A. Carry it while it is still connected to the power supply
- B. Pull the computer by its power cable
- C. Shut it down and disconnect the power supply before moving it
- D. Move it while the cooling fan is still running

(iv) Which Python function is used to receive data entered by a user during program execution?

- A. print()
- B. output()
- C. scanf()
- D. input()

(v) Which of the following best describes an algorithm?

- A. A computer virus
- B. A sequence of logical steps used to solve a problem
- C. A programming language
- D. A computer operating system

(vi) What is the correct order of the first three steps in the problem-solving cycle?

- A. Design, Define, Analyse
- B. Define, Analyse, Design
- C. Code, Test, Design
- D. Analyse, Design, Code

Student's assessment number:

(vii) Which internet service allows a user to log into a remote computer system as if they were sitting at the terminal?

- A. FTP
- B. Telnet
- C. WWW
- D. SMTP

(viii) In C programming, which escape sequence is used to move the cursor to a new line?

- A. \t
- B. \a
- C. \n
- D. \b

(ix) Which storage device has no moving mechanical parts and therefore provides faster data access?

- A. Optical Disk
- B. Hard Disk Drive (HDD)
- C. Solid State Drive (SSD)
- D. Magnetic Tape

(x) In Python, what will be displayed by the following statement?

`print(8 % 3)`

- A. 2
- B. 1
- C. 3
- D. 8

Answers

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)

2. Match the items in List A with the correct descriptions in List B

List A	List B
(i) ISP	A. A device that connects a computer to a network using wireless signals
(ii) Wi-Fi	B. A company or organisation that provides users with Internet access
(iii) Web browser	C. A system used to translate a domain name into an IP address
(iv) Search engine	D. Software used to access and view web pages
(v) DNS	E. A service used to find information on the Internet
	F. A physical device used to print information on paper
	G. A program used to protect a computer from malware

Answers

List A	(i)	(ii)	(iii)	(iv)	(v)
List B					

SECTION B (70 MARKS)

Answer **all** questions in this section.

3. A secondary school has recently connected its computer laboratory to the Internet. Some students are able to access websites, while others cannot connect. The school also wants students to use the Internet responsibly.

(a) State two requirements needed for a computer to connect to the Internet.

(i)
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(ii)
.....

(b) A student wants to participate in an online lesson from home. State two factors that can affect the quality of the Internet connection.

(i)
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(ii)
.....

(c) Explain two responsible practices that students should observe when using the Internet for school work.

(i)
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(ii)
.....

(d) A student receives information from an unknown website and wants to use it in a school assignment. State two things the student should do before using the information.

(i)
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(ii)
.....

4. Seypalm secondary school wants to develop a computer program that calculates the total cost of exercise books purchased by a student.

Each exercise book costs TZS 2,500.

The program should:

- input the student's name;

Student's assessment number:

- input the number of books purchased;
- calculate the total cost;
- display the student's name and total amount.

Required:

(a) Write an algorithm for the above problem.

(b) Draw a flowchart representing your algorithm.

(c) Explain two advantages of using algorithms and flowcharts before writing a computer program.

(i)

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(ii)

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5. After connecting a new printer to a computer, the device fails to print documents even though it is properly connected. Further investigation shows that the correct driver has not been installed.

(a) Explain why installing the correct driver is important for computer hardware.

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(b) State two problems that may occur when the wrong driver is installed.

(i)
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(ii)
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(c) Describe two steps that can be followed to solve the problem and restore normal functionality.

(i)
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(ii)
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6. A school's computer laboratory has experienced the following problems:

- (i) computers restart unexpectedly;
- (ii) some computers are overheating;
- (iii) files are taking a long time to open;
- (iv) keyboards fail to respond.

Required:

(a) Suggest one possible cause for each problem.

(i)
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(ii)
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(iii)
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(iv)
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(b) Recommend one appropriate solution for each problem.

(i)
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(ii)
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(iii)
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(iv)
.....

(c) Explain two benefits of carrying out routine computer maintenance in a school laboratory.

(i)
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(ii)
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7. (a) Define "Data Type".

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(b) Mention and explain four basic data types used in most programming languages.

(i)
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(ii)
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(iii)
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(iv)
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(c) A data structure is a specialised format for organising, processing, retrieving, and storing data in a computer's memory so that it can be used efficiently. Give the meaning of the following data structures.

(i) Linked list

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(ii) Queue

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8. Study the following Python program and answer the questions that follow:

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name = input("Enter your name: ")
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marks = int(input("Enter marks: "))
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if marks >= 50:
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```
    print("PASS")
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else:

print("FAIL")

(a) State the purpose of the program.

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(b) What will be displayed if the user enters 67 as the marks?

(c) Identify the conditional statement used in the program.

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(d) Modify the program so that it also displays the student's name together with the examination result.

9. A student receives an email asking for their school portal username and password, claiming that the account will be blocked if they do not respond immediately.

(a) Identify the type of cyber threat described in the scenario.

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(b) State two dangers of responding to such emails.

(i)

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(ii)

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(c) Explain two safety measures students should follow to protect their accounts online.

(i)

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(ii)

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SECTION C (15 MARKS)

Answer this question.

10. A school canteen intends to computerise its sales system.

The selling price of one meal is TZS 4,000.

Students who buy five or more meals receive a 5% discount.

The program should:

Student's assessment number: xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx

- (i) input the student's name;
- (ii) input the number of meals purchased;
- (iii) calculate the gross amount;
- (iv) calculate the discount where applicable;
- (v) calculate the net amount payable;
- (vi) display all results.

Required:

- (a) Write an algorithm for the above problem.

- (b) Draw a flowchart to represent your algorithm.

- (c) Write a Python program that implements the solution.