

### 3.23 COMPUTER STUDIES (451)

#### 3.23.1 Computer Studies Paper 1 (451/1)

##### SECTION A (40 marks)

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

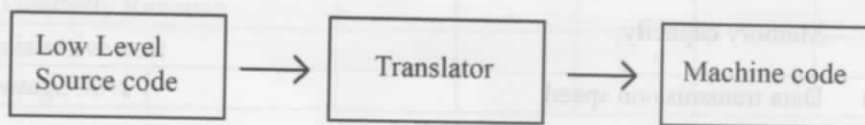
1. List **four** input devices used to capture data by way of scanning. (2 marks)
2. Explain **two** consequences of **not** restricting the use of USB flash drives in a school computer laboratory. (4 marks)
3. Differentiate between a *computer power cable* and a *computer interface cable*. (2 marks)
4. Explain **two** computer hardware features that may be considered when selecting a laptop computer to be used when developing a KCSE computer studies project. (4 marks)
5. List **two** examples of operating systems that are **not** capable of supporting computer networks. (2 marks)
6. Explain each of the following functions of an operating system:
  - (a) Process scheduling; (2 marks)
  - (b) Interrupt handling. (2 marks)
7. Give **two** examples of each of the following application packages:
  - (a) Databases; (1 mark)
  - (b) Word processing; (1 mark)
  - (c) Desktop publishing. (1 mark)
8. State **two** ways of preventing children from accessing adult content in a computer device linked to the internet. (2 marks)
9. A health centre stores patient's details in a computer. State **two** ways of maintaining confidentiality of the information. (2 marks)
10. Convert the decimal number  $9.25_{10}$  to its binary number equivalent. (3 marks)
11. Explain the meaning of the term "*distributed data processing*" as used in computers. (2 marks)

12. The area of a triangle is obtained using the formula:  $\text{area} = \frac{1}{2} \text{base} \times \text{height}$ . Draw a flowchart that captures the input from a user, computes the area of the triangle and displays the results. (3 marks)
13. State **two** circumstances that may necessitate the use of a questionnaire in system development. (2 marks)
14. An organisation opted to connect their computers to form a network. State **two** ways through which the organisation may save on the costs of their operations upon implementing the network. (2 marks)
15. State **three** benefits that may be realised by using ICT to manage automobile traffic operations. (3 marks)

**SECTION B (60 marks)**

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

16. (a) Explain **two** ways that may be used to identify the existence of errors in a program. (4 marks)
- (b) **Figure 1** shows a program translation model involving the use of a translator:



**Figure 1**

- (i) State the type of translator that is required in this model. (1 mark)
- (ii) Explain the reason for the conversion from low level source code to machine code. (2 marks)
- (c) A private college intends to offer training on computer packages to a class consisting of 25 students. Each student is required to pay Ksh 2 000 for this training. A discount of 14% is awarded to each student who will have paid full fees by the opening date of the new term.
- Write a pseudocode that captures fees paid by each student, determine whether the student is eligible for the discount, computes the total fees collected and the total discount awarded. (8 marks)
17. (a) Explain **three** benefits of using twisted pair cables in a local area network. (6 marks)
- (b) Charles has linked five computers at his home using star topology.
- (i) Draw a diagram representation for this topology. (2 marks)
- (ii) State **three** reasons that may have prompted him to use this topology. (3 marks)