

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 State **two** circumstances under which warm booting of a computer may be necessary. (2 marks)
- 2 List **six** file manipulation activities that may be carried out using an operating system. (3 marks)
- 3 **Figure 1** shows relationships between tables in a database.

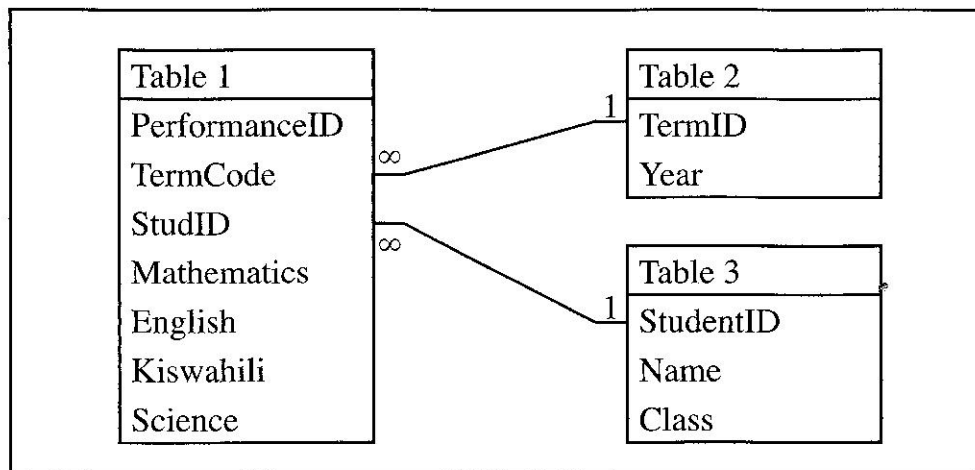


Figure 1

- Identify **two** primary and **two** foreign keys used in the relationship. (2 marks)
- 4 State **two** advantages of using portable computers. (2 marks)
- 5 (a) Write the acronym MODEM in full. (1 mark)
- (b) Explain the purpose of a modem when connecting to the internet. (2 marks)
- 6 Distinguish between an *assembler* and an *interpreter* as used in programming. (2 marks)
- 7 State **three** possible causes of fire outbreak in a computer laboratory. (3 marks)
- 8 State **three** benefits of using optical magnetic reader to register candidates for an examination. (3 marks)
- 9 List **four** factors to be considered when acquiring a printer. (4 marks)

- 10 State **three** circumstances under which voice input would be preferred over other methods of data capture. (3 marks)
- 11 A computer technician found it necessary to disable a firewall when working on a computer system. State **two** reasons that may have necessitated disabling of the firewall. (2 marks)
- 12 State **two** advantages of making payments through a mobile phone. (2 marks)
- 13 State **three** reasons why it is important to define datatypes of fields in a database correctly. (3 marks)
- 14 Explain **two** uses of a system documentation in system development. (4 marks)
- 15 Distinguish between a *systems administrator* and a *database administrator* as used in computers. (2 marks)

SECTION B (60 marks)

Answer Question 16 and any other THREE questions in this section in the spaces provided.

- 16 (a) List **four** web programming languages. (2 marks)
- (b) State **four** ways in which a programmer can make program code easy to follow. (4 marks)
- (c) Draw a program flowchart to represent the following pseudocode. (9 marks)

```

Begin
    While scores exist
        initialize sum to zero
        initialize counter to zero
        input a score
        increment counter by 1
        Add score to sum
        If there are more scores to read,
            compute average as sum divided
            by counter
            Print the average
        Else
            input next score
        End if
    Else
        Print no records exist
    End while
End

```

- 17 (a) (i) In the BCD number coding scheme, letter A is represented by 110001 and letter B by 110010. Determine how the word CAB is coded in BCD. (2 marks)
- (ii) Convert the decimal number 11.125 to its binary number system equivalent. (3 marks)
- (iii) Perform the binary arithmetic:
 $111.01 + 1011.111 - 101.011$
 and convert the answer to decimal notation. (3 marks)
- (b) Explain the importance of each of the following in word processing:
- (i) tab stops; (2 marks)
- (ii) section breaks. (2 marks)
- (c) State **three** documents that are used during mail merging in word processing. (3 marks)
- 18 (a) State **three** functions of networking operating systems other than providing network security. (3 marks)
- (b) Explain **three** ways in which an operating system provides data security in a computer system. (6 marks)
- (c) Explain **three** circumstances under which observation method may be preferred during data collection. (6 marks)
- 19 (a) (i) List **two** techniques of acquiring electronic images to be used in a desktop publishing program. (1 mark)
- (ii) Describe **two** layout guides in a desktop publishing program (DTP) that assist a user to place an object in a preferred position. (4 marks)
- (b) Explain **three** ways of ensuring that data submitted for processing is accurate. (6 marks)
- (c) An engineering company requires a computer system to design roads and bridges. Explain **one** suitable choice for:
- (i) output device; (2 marks)
- (ii) software. (2 marks)