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 the function of the control unit in respect to each of the following: (2 marks)

(a) coordination;

(b) flow of data.

2 A school intends to acquire a desktop computer. State **three** factors the school should consider about the computer memory. (3 marks)

3 State the difference between Random Access Memory and Read Only Memory with respect to volatility. (1 mark)

4 State **three** circumstances that may necessitate formatting of a computer hard disk. (3 marks)

5 (a) Arrange the following units of measurement in a computer from the largest to the smallest. (1 mark)

byte, nibble, bit, word

(b) Convert 2560 Gigabyte (GB) to Terabyte (TB) . (2 marks)

6 A company prefers laser printers over dot matrix printers for its operation. State **three** technological reasons for the preference. (3 marks)

7 State **two** possible actions that a user may take when a computer's operating system becomes unresponsive to commands. (2 marks)

8 Explain each of the following factors in reference to integrity in data processing: (4 marks)

(a) timeliness;

(b) relevance.

9 Write an example for each of the following cell reference methods in spreadsheets: (3 marks)

(a) mixed reference;

(b) relative reference;

(c) absolute reference.

10 State **three** reasons that have led most business people to prefer the use of Electronic Funds Transfer (EFT) as a mode of payment. (3 marks)

11 Explain the term *authenticity* as a criterion for software selection. (2 marks)

12 Distinguish between a word wrap and wrap text as used in word processing. (4 marks)

13 A data analyst wishes to use a keyboard to navigate within a worksheet in an electronic spreadsheet. Other than arrow keys, state **three** examples of navigation keys the analyst may use. (3 marks)

14 Distinguish between a stroke and a fill as used in Desktop Publishing. (2 marks)

15 Explain the function of a web server in the internet. (2 marks)

SECTION B (60 marks)

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

16 (a) State **three** characteristics of a source code in programming. (3 marks)

(b) A systems programmer opts to develop an application using a low-level programming language. Explain **three** reasons for the option. (6 marks)

(c) (i) Draw a flowchart for a program that prints the following sequence of numbers; 6, 9, 12, 15 ... for all the values less than 150. (4 marks)

(ii) State **two** advantages of using flowcharts in programming. (2 marks)

17 (a) State **three** factors that may be considered when creating user forms during system development. (3 marks)

(b) Explain **two** benefits of carrying out unit testing during system development. (4 marks)

(c) System users in an organization were provided with the user-manual. Explain **two** uses of this manual. (4 marks)

(d) A user replaced a command line based operating systems with Graphical User Interface operating system in a computer. State **four** windows interface operations that the user would be able to perform with the new operating system that could not be done with the replaced operating system. (4 marks)

18 (a) A school has been advised to install an email software. State **four** advantages the school would gain from this service. (4 marks)

(b) A database table has fields; EmployeeID, EmployeeName, HoursWorked and Rate_per_hour. Write an expression that would return:

(i) a field named wages which is a product of hours worked and rate per hour; (3 marks)

(ii) details of employees whose EmployeeID is between 100 and 200. (2 marks)

(c) (i) Explain the term *data encryption* as used in data security. (2 marks)

(ii) With the aid of an illustration, explain the process of data encryption during transmission of data. (4 marks)

19 (a) System development companies are opting to hire employees from any part of the world. State **three** web development related skills that these companies may look for. (3 marks)

(b) Using one's complement convert the decimal number 19.625 to its binary number equivalent. (6 marks)

(c) A company realised that its systems had been jammed and all its online services made inaccessible. Explain **three** control measures the company should have put in place to prevent this occurrence. (6 marks)

20 (a) State **three** effects of e-waste materials on the home environment. (3 marks)

(b) A student was advised to back-up project files on a secondary storage device. Explain **two** reasons for backing up the files. (4 marks)

(c) Explain **one** function of each of the following computer network components: (4 marks)

(i) gateway;

(ii) bridge.

(d) **Figure 1** shows a cross section of a type of cable used in data communication. Study it and answer the questions that follow.

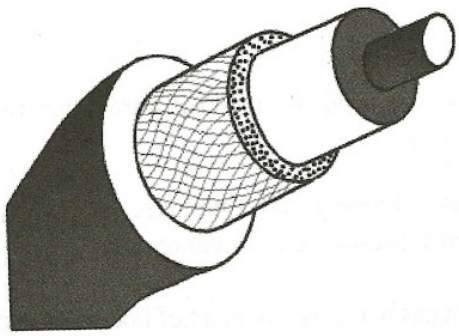

Figure 1

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

(ii) State **three** advantages of using this type of cable. (3 marks)