

**SECTIONS I and II**  
**TECHNICAL AND GENERAL PROFICIENCIES**  
**ANSWER ALL QUESTIONS.**

**SECTION I - 30 marks**

1. State the function of EACH of the following hardware components:

- (a) Control unit ( 1 mark )
- (b) Arithmetic and logic unit (ALU) ( 1 mark )
- (c) Read Only Memory (ROM) ( 1 mark )
- (d) Random Access Memory (RAM) ( 1 mark )

Total 4 marks

Give ONE similarity and ONE difference between EACH of the following terms:

- 2. (a) ROM and EPROM (2 marks)
- (b) Byte and word (2 marks)
- (c) Floppy disk and Hard disk ( 2 marks)

Total 6 marks

3. In your answer booklet write the letters A to E to represent EACH application in the table below and beside EACH letter write the Roman Numeral to match the applications with the MOST APPROPRIATE input device.

|   | Application                         |
|---|-------------------------------------|
| A | Cheque processing                   |
| B | Marking multiple-choice examination |
| C | Point-of-sale                       |
| D | Games                               |
| E | Architectural design                |
|   |                                     |

|       | Input Device                       |
|-------|------------------------------------|
| (i)   | barcode reader                     |
| (ii)  | joystick                           |
| (iii) | graphic tablets                    |
| (iv)  | optical mark reader                |
| (v)   | magnetic ink character recognition |

**Total 5 marks**

4. (a) Name ONE direct access secondary storage device and ONE serial access secondary storage device. (2 marks)
- (b) With reference to a diskette, state the relationship between a track and a sector? (2 marks)
- (c) State the optical storage medium that is BEST suited for the storage of a movie. (1 mark)

**Total 5 marks**

5. (a) Convert the decimal number 25 to binary, using an eight-bit representation. (1 mark)
- (b) The binary number 1100101101 uses 10 bits to store sign and magnitude. What is the decimal number equivalent? (2 marks)
- (c) State the Binary Coded Decimal (BCD) representation for the decimal number 358. (2 marks)
- (d) State the eight-bit twos complement representation of the decimal number 63. (2 marks)

**Total 7 marks**

6. (a) Name the software package that would have mail merge. (1 mark)
- (b) Explain why mail merge is important in this software package (2 marks)

**SECTION II - 30 marks**

7. (a) State the relationship that exists among 'web site', 'web page' and 'web browser'. (3 marks)
- (b) Explain the difference between 'Electronic mail' and 'Internet relay chat'. (2 marks)

**Total 5 marks**

8. The Police Department has introduced a computer system in every police station around the country.
- (a) List TWO uses of the computer in the police station. (2 marks)
- (b) State TWO devices that may be used with the computer. (2 marks)
- (c) List TWO Information Technology skills the operator of the computer should have. (2 marks)

Total 6 marks

9. (a) Name and describe ONE physical access method which would ensure that ONLY authorized personnel have access to important computer equipment. (2 marks)
- (b) Describe ONE software access method which would ensure that ONLY authorized personnel have access to software and data. (2 marks)
- Total 4 marks

10. A computer technician visits a company stating that he was sent to "fix some computers". He is not known to the company.

- (a) What do you understand by computer fraud? (1 mark)
- (b) Explain with reasons, TWO actions that you would carry out to verify that this technician is on official business. (4 marks)

Total 5 marks

11. (a) Describe ONE job function of EACH of the following:

- (i) File Librarian (1 mark)
- (ii) Electronic Data Processing Auditor (1 mark)
- (iii) Computer Consultant (1 mark)
- (iv) Data Communications specialist (1 mark)
- (b) (i) What is 'teleconferencing'? (1 mark)
- (ii) a) State THREE advantages of teleconferencing. (3 marks)
- b) State TWO hardware requirements for teleconferencing. (2 marks)

Total 10 marks

**THIS SECTION IS FOR TECHNICAL PROFICIENCY CANDIDATES ONLY.**

**SECTION III - 30 marks**

**PROGRAMMING**

**ANSWER ALL QUESTIONS.**

12. Write an algorithm using pseudocode to do the
- Read in two values Multiply both values by the number 10 and add the results Square both values and add the Squares (1 mark)
- Check if the answer to (b) is greater than the answer to (c) (2 marks)
- (2 marks)
- (1 mark)

following sequence of tasks:

(a)

(b)

(c)

(d)

If the question c answer is greater, print a statement indicating that "The squares have won." If the question b answer is greater, print a statement indicating that "The Products have produced a win." ( 2 marks)

(e)

**Total 8 marks**

13. Use a structured language to code an algorithm that will find the sum and average of a collection of integers.

( 1 mark)

( 2 marks)

(2 marks)

**Total 5 marks**

(a) Allow the user to enter the quantity of values being used.

(b) Allow the user to input the values

(c) Calculate the sum and the average.

14. (a) Give ONE example of a high level language and explain how it is different from an assembly level language. ( 2 marks)

(b) The following is a small program segment. For EACH line, write a short comment explaining what the statement does.

For i = 1 to count

Print "Item No."

Next i

( 3 marks)

- (c) The following code uses the operator '%' to find the remainder after one number divided by another (e.g.  $5 \% 4 = 1$  and  $12 \% 5 = 2$ ). Use a trace table to show the output of the program.

```
For i = 1 to 3
  If i % 3 = 0
    Print A
  Else
    Print B
```

( 2 marks)

Total 7 marks

15. Develop pseudocode and then translate the pseudocode to a structured language for the following sequence of steps.

(a) Prompt the user for a value. Announce that this value is a bid being placed on a valuable artifact - a 1751 antique watch. ( 2 marks)

(b) Accept the value. ( 2 marks)

(c) Compare the value received from the user with the minimum price of the item - a value that you have as a part of your program (antique watch - 7,000). ( 2 marks)

(d) Indicate to the user if his bid has been successful (if the bid is higher than the minimum it is a successful bid). If the bid is not successful indicate that also. ( 4 marks)

Total 10 marks