INSTRUCTIONS TO CANDIDATES

❖ Answer ALL questions in section A.
❖ Answer question 16 compulsory and any other THREE questions from section B.
❖ All answers should be written in the spaces provided on the question paper.
SECTION A (40 MARKS)

Answer all the questions in this section.

1. a) Explain the role of the following
   (i) Computer programmer                  (4 mks)
       ______________________________________
       ______________________________________
       ______________________________________
       ______________________________________
   (ii) Software engineer                     (1 mk)
        ______________________________________
        ______________________________________

2. (i) What is electronic point of sale terminal?        (1 mk)
        ______________________________________

   (ii) Explain two advantages of using this system.     (2 mks)
        ______________________________________
        ______________________________________
        ______________________________________
        ______________________________________
   (iii) Give an application area of this system.        (1 mk)
        ______________________________________

3. Explain the purposes of the following files.
   a) Back up                                      (1 mk)
        ______________________________________
        ______________________________________
   b) Reference                                    (1 mk)
        ______________________________________
        ______________________________________

4. a) Perform the following binary arithmetic giving the answer in decimal notation.  (2 mks)

   11101.011 + 111.11
b) State two application areas of virtual reality. (2 mks)

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5. What are the purposes of the following DOS commands. (3 mks)
a) RD

________________________________________________________________________
________________________________________________________________________

b) DIR **

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________________________________________________________________________
c) CD

________________________________________________________________________

6. a) State three differences between wide area network and local area network. (1½ mks)

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________________________________________________________________________

b) Explain the terms below as used in computer network.
   (i) Point to print (1 mk)

________________________________________________________________________

(ii) Broadcast (1 mk)

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7. State three parts that constitute an IF statement. (1½ mks)

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8. You are provided with USB, Parallel and serial cables. Which of the cables provided can be used to:
   a) Support variety of peripheral devices. (1 mk)
   c) Transmit data in short distance. (1 mk)
   d) Transmit data fast in long distance. (1 mk)

9. The formula $K20 + P$ 18 was typed in cell L21 and then copied to cell M24 of spreadsheet. Write a formula as it appears in cell M24. (2 mks)

10. Distinguish between logical and physical files as used in computer. (2 mks)

11. Tea processing zone wants to acquire a new software.
   a) State three items that should accompany the software. (1½ mks)
   b) State three purposes of word processing package.

12. Give two differences of high and low level languages. (2 mks)
13. Define the terms below.
   a) Nibble (1 mk)
      ________________________________________________________________
      ________________________________________________________________
   b) Bit (1 mk)
      ________________________________________________________________
      ________________________________________________________________
   c) Word (1 mk)
      ________________________________________________________________
      ________________________________________________________________

14. The diagram below represents a task bar. Use it to answer the questions below.

   "Start button |   R   |   S  "

   a) Name the part labelled;
      (i) R  (1/2 mk)
          ________________________________________________________________
      (ii) S  (1/2 mk)
          ________________________________________________________________
   b) Explain the differences between R and S. (1 mk)
      ________________________________________________________________
      ________________________________________________________________
      ________________________________________________________________
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15. a) Name two types of files in a computer. (1 mk)
      ________________________________________________________________
      ________________________________________________________________
      ________________________________________________________________
      ________________________________________________________________
      ________________________________________________________________
      ________________________________________________________________
   b) Explain safety precaution in computer used in safeguarding.
      (i) Hardware (1 mk)
          ________________________________________________________________
          ________________________________________________________________
          ________________________________________________________________
          ________________________________________________________________
      (ii) Loss of computer programs (1 mk)
          ________________________________________________________________
          ________________________________________________________________
          ________________________________________________________________
          ________________________________________________________________
SECTION B: (60 MARKS)

Answer question 16 which is compulsory and any other three questions from this section

16.  a) Define the terms below.

(i) Algorithm

________________________________________________________________________
________________________________________________________________________

(ii) Pseudo code

________________________________________________________________________
________________________________________________________________________

(iii) Flowchart

________________________________________________________________________
________________________________________________________________________

b) Draw a flowchart to compute the result of the following formula.  

\[ K = \frac{1}{(M+1)^2} \]  

(5 mks)
c) Write a program in high level language for a flowchart in b (above)  

(5 mks)

d) Explain the purpose of program compilation before testing.  

(2 mks)

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17. You are provided with the following entries in the spreadsheet.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Items</td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Shoes</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pencils</td>
<td>400</td>
<td>300</td>
<td>600</td>
<td>700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Books</td>
<td>100</td>
<td>200</td>
<td>450</td>
<td>350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Ruler</td>
<td>900</td>
<td>760</td>
<td>350</td>
<td>102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Rubber</td>
<td>60</td>
<td>80</td>
<td>200</td>
<td>450</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a) State the cell data type represented by:

(i) Cell A4  

(1 mk)

________________________________________________________________________

(ii) Cell C4  

(1 mk)

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(iii) Explain the difference between cell A4 and C4.  

(1 mk)

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b) Provide a formula for cell E5 that can be used to give 10% increase of cell E5.  

(2 mks)

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c) Using count function, write an expression to determine the number of items greater than 300 in the month of January.  
(2 mks)

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d) Explain two reasons why:
(i) Hypertext mark up language is not a true programming language.  
________________________________________________________________________  
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(iii) State three examples of web scripting language.  
(3 mks)
________________________________________________________________________  
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e) Differentiate between validation and verification as used in system development.  
(1 mk)
________________________________________________________________________

f) Explain two advantages of using modules during system implementation stage of development.  
(2 mks)
________________________________________________________________________  
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18. a) (i) Explain two advantages of acquiring micro-computers in schools.  
(2 mks)
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(ii) With an aid of well labelled diagram explain mesh network topology. (3 mks)

(iii) Explain two advantages and one disadvantage using this topology. (2 mks)

b) Distinguish between
(i) Data encryption and passwords. (1 mk)

(ii) Dry run and walk through (1 mk)

c) The diagram below represents essential features of a computer system. Study the diagram and answer the questions that follows.

(i) Name the components (4 mks)

X
R
S
Q

(ii) In the diagram above indicate the direction of data flow using arrows. (2 mks)
19. a) (i) What is multimedia? (1 mk)

________________________________________________________________________
________________________________________________________________________

(ii) State two examples of multimedia system devices. (2 mks)
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b) Firestone Kenya purchased hardware components from World Computer services - Firestone Kenya, later demanded a document of warranty.

(i) What is a warranty? (1 mk)
________________________________________________________________________
________________________________________________________________________

(ii) Describe three important information that may entail in the warranty. (6 mks)
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20. a) Explain how the operating system perform the following.

(i) Job sequencing. (2 mks)

(ii) Job scheduling (2 mks)

b) With use of examples describe two types of desktop publishing software. (4 mks)

c) Define the terms below

(i) Chatting (1 mk)

(ii) Website (1 mk)

(iii) Search engine (1 mk)

b) Explain the effect of information technology in;

(i) Employment (2 mks)

(ii) Environment (2 mks)