MANGA DISTRICT EVALUATION TEST
451/1
COMPUTER STUDIES
**PAPER 1**
MARKING SCHEME

1. Is the first computer like machine invented by an Asian merchant called Abascus in 2000 years age before Christ (BC) for simple but large mathematical calculations.

2.
    - Less expensive than supercomputers
    - Used to do complex work
    - Have large storage capacity
    - Used in banks, hospitals and air crafts
    - Handle both commercial and scientific problems
    - Have lots of banking storage
    - Used in both LAN and WAN
    - Support variety of peripherals
    - Less powerful than supercomputers
    - Examples are: 1Bm 4381, IC1139 series

3. (a)

OMR	**OCR**
- Recognise marks	- recognizes characters
- Used to mark multiple questions in exams	-Used to scan objects, pictures and drawings

    (b)

Power cables	**Interface cable**
- Transmit power to computer hardware	- Transmit data signals as computer software
- often are external	- are often internal e.g ribbons

4.
    - Are also called typewriter keys
    - Found at the left hand side of the keyboard
    - Consists of both numeric and alphabetical keys
    - Example are: 0 – 9, A – z, @, %, =, ><, ?, !, e.t.c

5. (a)

Hanging indent	**Full indent**
- Moves the whole document towards the right hand side except the 1st line	- Moves the whole document towards the right hand side

    (b)

Save	**Save as**
Saves a document for the second or more times in the same path and location	- Saves a document for the first time in a new path and location

    (c)

Insert mode	**Type over mode**
- Pushes characters towards the right hand side of the text	- Erases characters towards the right hand side of the text

6. (a) 61 + 53 + 32 = 146bytes
       If 1byte = 8 bits
          146bytes = ?

    $$= \frac{146 \ x \ 8}{1} = 1168 bits$$

    (b) 1000bytes = 1KB
       1000000bytes = 1MB

    $$146 \text{ bytes} = \frac{146 \ x \ 1}{10^6}$$
    $$= 1.46 \ x \ 10^{-4} MB$$
    $$= 0.000146MB$$

1.440000

0.000146 –
_____
1.439854MB

7.   (a) Is a collection of related data/ information stored in one location
    (b) **File**   **Folder**
    - Space filled   - Empty space
    - Stored in folders   - Stores files

8.   a) MD – Creates new directory
    b) CD – Moves to a specified directory
    c) TYPE – Retrieves a specified file
    d) DIR/W – Displays a directory pagewise
    e) EDIT – Creates a text document
    f) PROMPT – Takes one to a specified drive

9   a) Is a concept f blanksheet or pages with ruled tables in terms of rows and columns
    b) – Cells
       - Rows
       - Columns
       - Range

10.   a) prevents record repetition
       Aids record searching
    b) Displays all name records whose first character is character'j'
    and any other character that follows

11.   a) Mosaic – is a software interface between the web and typermedia
    b) Domain – Is a set of websites on the internet which end up with the same group of letters
    c) History – is a booklet program keeping track of all web pages viewed since one started browsing the web in terms of date , time, type e.t.c
    d) hypertext – is a text stored in a computer system allowing computer users to navigate between documents

12.   a) **Data security**   **Data privacy**
    - Prevents unauthorized persons from data   - Prevents authorized persons form data
    and information access   and information access
    b) Is a person who intentionally breaks codes and passwords to gain unauthorised entry to computer data and information files aiming to gain fame

13.   a) Text
    b) Time/ date
    c) Yes/ No
    d) Numeric
    e) Autonumber

14.   a) R2C2
    b) C10
    c) R20C5

15.   i) Username
    ii) Internet service provider
    iii) Dot or period
    iv) Domain name

16.   a) (i)- Declare a, b, c, x_1, x_2 and y as real type
         - Read the numeric values of a, b and c
         - Calculate the variable $\sqrt{b^2 - 4ac}$ and equate it to y
         - Calculate x_1 and x_2 using the formula as $x_1 = \dfrac{-b+y}{2xa}$ and $x_2 = \dfrac{-b-y}{2xa}$

- Display x_1 and x_2

(ii) - Program roots (input and output)
  - Declare a, b, c, x_1, x_2 and y as real type
  - Begin
  - Generate a prompt to inputa, b, c
  - Read a, b, c
  - Evaluate y = sqrt(sqrt(b)) – 4 x a x c
  - Evaluate x_1 and x_2 using the formulae

$$x_1 = \frac{-b+y}{2\,xa} \quad \text{and} \quad x_2 = \frac{-b-y}{2\,xa}$$

  - Display x_1 and x_2
  - End

b)
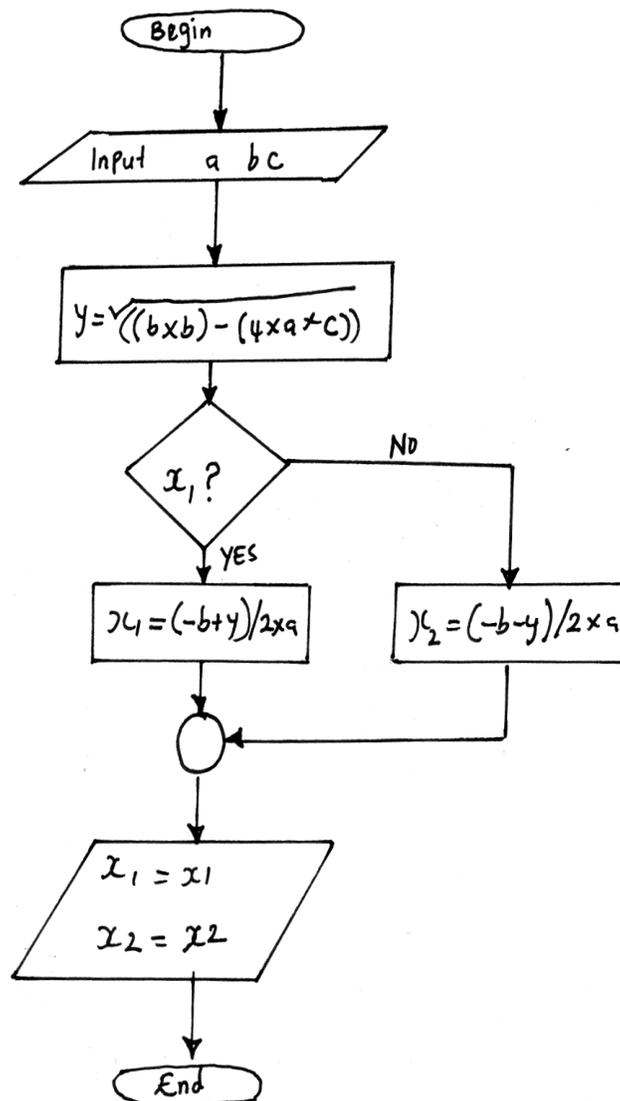
c) Program roots (input and output);
   Var a, b, c , x_1 , x_2 ,y : real;
   Begin
   Writeln ("enter a,b,c") ;
   Readln (a,b,c) ;
   y = sqrt(sqrt(b)) – 4 x a x c;

$x_1 = \dfrac{-b + y}{2\,xa}$;

$x_2 = \dfrac{-b - y}{2\,xa}$;

Writln ("$x_1 =$,"x_1:5:2 "$x_2=$,"x_2:5:2;
End.

17. a)

2	77
2	38R1
2	19R0
2	9R1
2	4R1
2	2R0
2	1R0
2	0R1

⇨1001101

$^9/_{20} = 0.075 = 0.075 \times \overset{2}{2} = 0.15$

        0.15 x 2 = 0.3
        0.3 x 2 = 0.6
        0.6 x 2 = 1.2
        0.2 x 2 = 0.4
        0.4 x 2 = 0.8
        0.8 x 2 = 1.6
        0.6 x 2 = 1.2
        ⇨0.0001001
    ⇨Join them: 1001101.0001001

b)   001111010011-
          100011
      00111001000+
        1101011
     01000110011-
         11001
      1000011010+
         00111
      1000100001
  ⇨1000100001_2

c)

Weight	2^2	2^1	2^0	.	2^{-1}	2^{-2}	2^{-3}	2^{-4}	2^{-5}
Binary	1	1	1	.	0	1	0	1	1
Value denary	4	2	1	.	0.5	0.25	0.125	0.0625	0.03125

    ⇨4 + 2 + 1 = 7   ⇨0.5 x 0 = 0.00
                         0.25 x 1 = 0.25
                         0.125 x 0 = 0.00
                         0.0625 x 1 = 0.0625
                         0.03125 x 1 = 0.3125
                                   0.34375

⇨Join them   ⇨ 7.34375_{10}

d)

2	29
2	14R1
2	7R0
2	3R1
2	1R1
2	0R1

  ⇨ 0011101

2	4
2	2R0
2	1R0
2	0R1

⇨100_2

⇨7bit = 0000100

⇨1st complement = 1111011

⇨2nd complement = 1111011

$$\frac{\qquad\qquad 1\;+}{1111100}$$

⇨Add them : 0011101

          $\underline{1111100}$

          $\underline{10011001}$

18.   a)

2 solid copper wire strands of different colours to easen differentiations
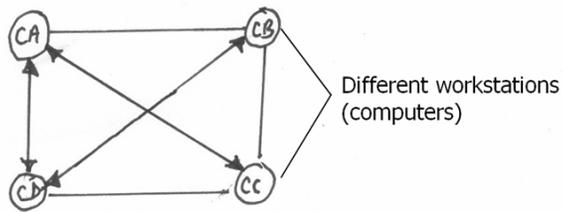
Merits

- Supports high data rates (bandwidth) of up to 100 mbps
- Cheaper due to mass production for telephone use
- Readily available

Demerits

- Suffers high attenuation
- Sensitive to electromagnetic interference
- Has low data transmission rates

b) (i) Half duplex that is communication in both directions but one direction at a time

(ii) Multiplexing – Is the process of sending multiple data signal over the same medium

(iii) X ray – Is one of the unbounded media data transmission of frequency 10^{20}Hzin electromagnetic spectrum as used to diagnose patients with broken borns in hospitals

c)

Different workstations (computers)

Merits
- Stations are independent and self satisfactional
- Incase of one station damage, no effect to others

Demerits
- Hard to install and configure
- Very costly/ expensive

19. a) That is a sub system which monitors shop stocking to prevent overstocking and understocking by use of closal day to day database item sales

b) - Bar code reader (hand held wand) is passed over the item bar code as the code is automatically converted to the item number e.g. 2717 which is read to the computer

- Next the computer searches the item(using that number) with the corresponding number in the product database

- Finally in finding the record item its description and price look up file is used for processing the sale accordingly

c) - Correct prices are used at the checkout counter hence accurate

- Speedy in operation - hence time saving

d) (i) **Bridge**   **NIC**
- It selectively broadcast packets   - It generates packet broadcasts
in segment

   (ii) **Switch**   **HUB**
- Forwards packets directly to its   - Forwards packets in directly to its destination by
destination without broadcasting it   broadcasting it

   (iii) **Routers**   **Browser**
- Routes packets to their right destination - This combines both capabilities of bridges and routers
by reaching its address first and if it finds a
wrong address, no packet transmission
instead its returned

20. a) - Review manual or bad system and recommend better automated new systems
   - Work with programmers to construct and test new systems
   - Train workers on how to use the new system implemented
   - Certify the new system to stay
   - Convince and influence system operators and users to use it

b) **Job replacement**   **Job displacement**
- Total unemployment   - Position changed or reduced
- Due to lack of employment   - Due to computer illiteracy

c) I. **(i) Repetitive strain injuries**
- That is strain of the neck, hands , arm, muscles, wrist, and buttocks

   (ii) Eye strain
- Eye strain, double vision etc leads to computer vision syndrome (CVS)

   (iii) Headache
- Headache, fever crops up causing one to avoid concentration due to blood travel affected

   II. (i) Takes breaks severally
      (ii) Wear eye glasses, adjust screen brightness and have good resolution monitors

(iii) Practice good teaching postures