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Course code —— CCA - 101

Course Name —— Fundamentals of I.T and Programming

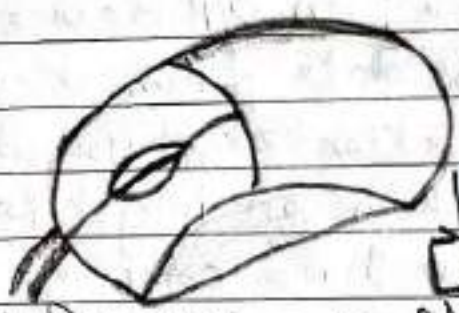
CCA-101: Fundamentals of IT and Programming
Assignment-1

Q1: What are the four fundamental parts of computer? Explain it with the help of diagram.

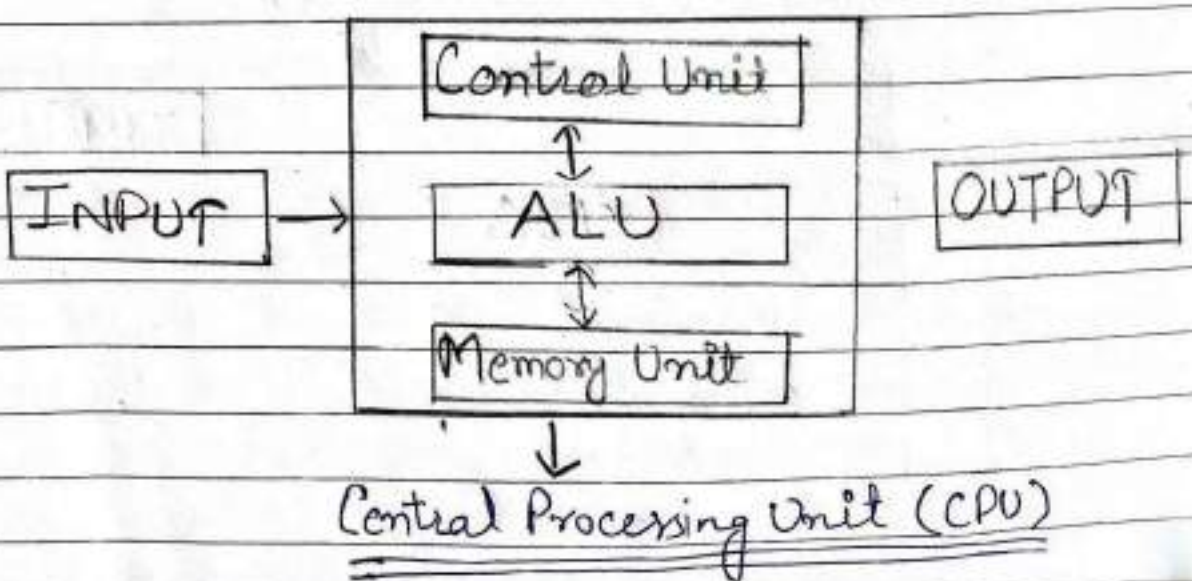
Ans:→ A computer has four main components:—

(1) Input Unit
(2) The central Processing unit or CPU.
(3) The Primary memory and
(4) Output Unit

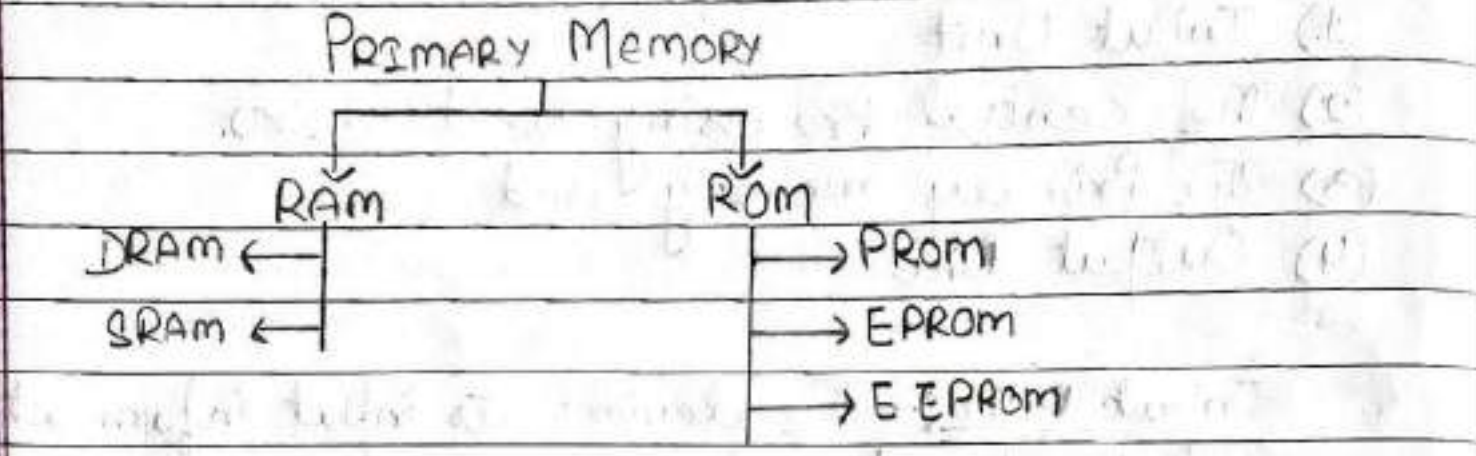
Input Unit:- The devices to input information, such as Keyboard and mouse.



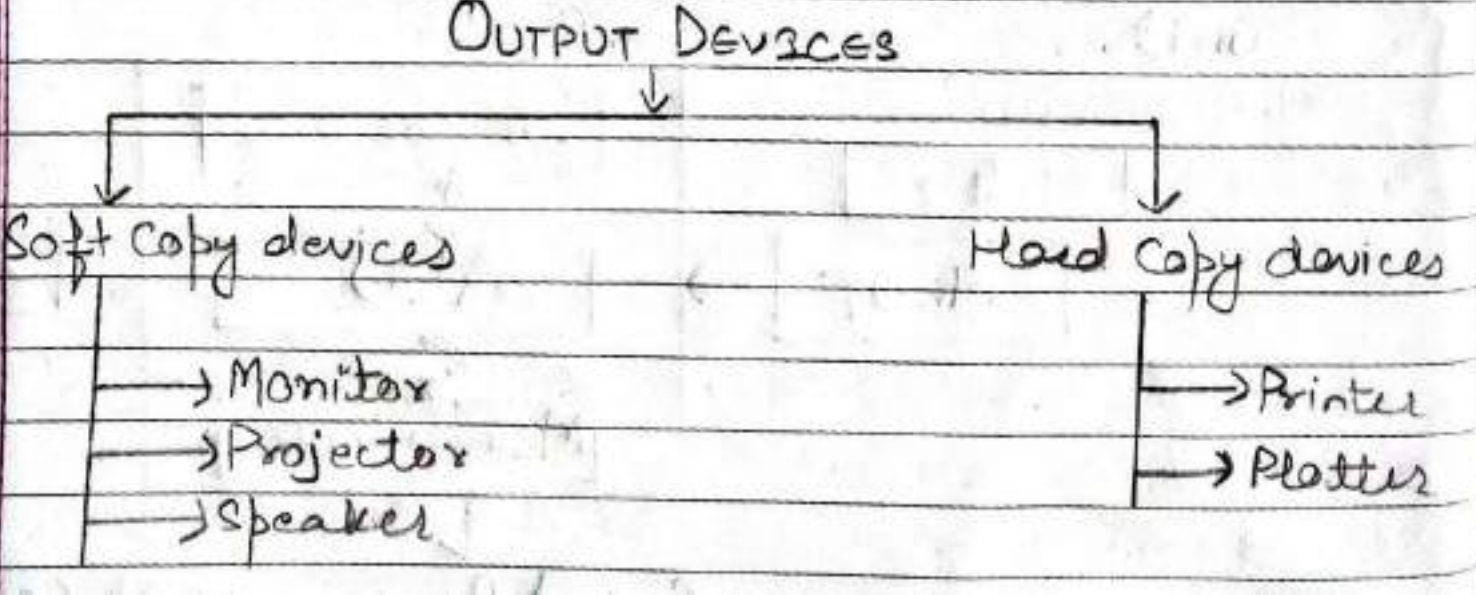
CPU or Central Processing unit:- The CPU is further broken up into ALU, Control Unit and Instruction unit.



Primary/Main Memory:- Primary memory is the computer memory that is directly accessible by CPU. It is comprised of DRAM and provides the actual working space to the processor. It holds the data and instructions that the processor is currently working on.



Output Device: An O/P device is any peripheral that receives data from a computer, usually for display, projection or physical reproduction e.g the image show an inkjet printer, an O/P device that make a hard copy of anything shown on the computer.



Q2:- Discuss about the Classification of computers based on size and capacity?

Ans:- Based on size and capacity, computers are classified as follows:-

→ Super computers
→ Mainframe Computers
→ Mini Computers
→ Micro Computers

Super Computer: A super computer is a computer with a high level of performance compared to a general-purpose computer. Performance of a super computer is measured in floating-pt. operations per second (FLOPS) instead of million instructions per second (MIPS).

Mainframe Computers: A mainframe is a large integrated machine with a lot of memory, a lot of storage capacity, and a lot of high-end processors for such a large functioning it has a lot of computational power in comparison to normal computer systems.

Mini Computer: Minicomputer, computer that was smaller, less expensive and less powerful than a mainframe or supercomputer but more expensive and more powerful than a personal computer. Minicomputers were used for scientific and engineering computations, business transaction processing, file handling and database management.

Micro Computer: A micro computer is a complete computer on a small scale designed for use by one person at a time. An antiquated term, a microcomputer is now primarily called a personal computer (PC), or a device based on a single-chip microprocessor. Common microcomputers include laptops and desktop.

Q3:→ What is the meaning of Computers Generation? How many Computer Generations are defined? What technologies were/are used?

Ans:→ Computer generation is classification of Computers into different groups according to their manufacturing date, memory device, hardware and software technologies used in them. There is five generation of Computer.

→ 1st Generation: The Period of first generation was from 1946-1959. The first computers of first generation used vacuum tubes as the basic components for memory and circuitry for CPU. These tubes like electric bulbs produced a lot of heat and the installations used to fuse frequently.

→ 2nd Generation: The Period of second generation was from 1959-1965. In this generation, transistors were used that were cheaper, consumed less power, more compact in size, more reliable and faster than the first generation machines made of vacuum tubes.

3rd Generation: The period of 3rd generation were computer's that emerged due to the development of the integrated circuit (IC). They were the first steps toward computers as we know them today. Their main feature was the use of integrated circuits, which allowed them to be shrunk down to be as small as large toasterts.

4th Generation: The period of 4th (fourth generation) was from 1971-1980. Computers of 4th generation used very large scale Integrated (VLSI) circuites. VLSI circuits and other circuit elements with their associated circuits on a single chip made it possible to have microcomputers of 4th generation

5th Generation: The 5th generation computer system was an initiative by Japan's Ministry of International Trade and Industry (MITI), begun in 1982, to create computers using massively parallel computing and logic programming. It was to be the result of a Govt./industry research project in Japan during the 1980's.

Q4:→ Differentiative between Valatile and Non-Volatile memories.

	Volatile Memory	Non-Volatile Memory
(1)	Volatile memory is the type of memory in which data is lost as it is powered off.	Non-volatile memory is the type of memory in which data remains stored even if it is powered off.

(2)	It is faster than non-volatile memory.	It is slower than volatile memory.
(3)	RAM is an example of volatile memory.	ROM (Read only memory) is an example of non-volatile memory.

Q5:- Distinguish among system software, application software and open source software on the basis of their features.

Ans:- System software: System S/W is a type of computer program that is designed to run a computer's hardware and application programs. If we think of the computer system as a layered model, the system software is the interface between the hardware and user applications. The operating system is the best known example of system software.

→ Application Software: An Application software program is a computer program designed to carry out a specific task other than one relating to the operation of the computer itself, typically to be used by end users. Word processors, media players, and accounting software are examples.

→ Open Source Software: Open source software is computer software that is released under a license in which the copyright holder grants users the rights to use, study, change and distribute the software and its code to anyone and for any purpose. Open source software may developed in a

collaborative public manner.

Q6(a) Create a file in MS-word to insert a paragraph about yourself and save it with file name "Yourself". Describe all steps involved in it.

Ans:- (i) Open Word or if word is already open, select File > New.

ii) In the search for online templates box, enter a search word like letter, resume or invoice or, select a category under the search box like Business, Personal, or Education.

iii) Click a template to see a preview.

iv) Select create.

(b) Write steps regarding followings

(i) To change the font style.

Ans:- Select the text you want to modify.

ii) To change the font size.

Ans:- Select the home tab and locate the font groups.

iii) To change the font color.

Ans:- Click the drop-down arrow next to font style box.

iv) To highlight (in yellow) the line that reads "need to get Ims's address".

Ans:- If you want to change the font to bold or italic, click the 'B' or 'I' icons on the format bar.

Q7:→ Create a file in MS-Word for the following document and save it with file name 'ms-word'. Describe all steps involved in it.

MS Word

MS Word is a widely used commercial word processor developed by Microsoft.

MS word is application software, which is capable of

- Creating
- editing
- saving and
- Printing any type of document.

→ **Creating**

(1) Click the microsoft office button/file tab.
(2) Select New, the new document dialog box appear.
(3) Select Blank document, It will be highlighted by default.
(4) A New blank document appears in the word window.
(5) Now you can create document by inserting text.
(6) Finally save document.

→ **Editing**

(1) Click the Edit tab.
(2) Select the text you want its edit.
(3) Using the tool in the edit toolbar, change the required formatting including font style, paragraph alignment, list formatting and Indentation option.

→ Saving

• To save document using save as command.

(1) Click the Microsoft office button / file tab.
(2) Select save as - word document.
(3) Select the location where you want to save the document using the drop-down menu.
(4) Enter a name for the document.
(5) Click the save button.

→ Printing any type of document

(1) Select File Print.
(2) To preview each page, select the forword and backward arrow's at the bottom of the page. If the text is too small to read, use the zoom slider at the bottom of the page to enlarge it.
(3) Choose the number of copies and any other options you want, and select the print button.

Q8:→ Create a file in MS-Word for the following document and save it with filename 'Equations'. Describe all steps involved in it.

Equations

$$x_2 + y_5 = 30$$
$$Z^3 + Q^4 = 50$$
$$A_2 + B^8 = X_2 + Y^8$$

Ans:→ (1) Select Insert > Equation or Press Alt + =
(2) To use a built - in formula, select design > equation.
(3) To create your own, select design > eq > Ink equation.
(4) Use your finger, stylus or mouse to write your equat...

(5) Select insert to bring your equation into the file.

Q9:→ Create a file in MS-word that convert existing highlight text to table as shown below and save it as file name 'text_to_table'. Describe all steps involved in it.

Select the text you want to convert.
Select the Insert tab.
Click on Table command. A dialog box appears.
Click on Convert Text to Table, a new dialog box appears.
here set number of columns.
Click on Ok finally Selected text convert in a table.

⇩

Select the text you want its convert	Select the Insert tab
Click on Table command. A dial-	Click on Convert Text to Table, a
-og box appears.	new dialog box appears.
here are numbers of columns	Click on OK finally Selected text
	Convert in a table

Ans:→ (1) Select the text and make sure its property formatted.

Word will insert a new column when a tab charaters is found, so make sure that columns are separated by tabs.

(2) Click the insert tab
(3) Click the table button.
(4) Select convert text to table.

If the text was formatted right, some of the options in this dialog box should already be filled in otherwise, set the numbers of columns and row, and how to separate the text into columns.

(5) (optional) customize Auto fit behaviour.
(6) Click OK.
The selected text is automatically turned into a table.

Q10:- Create a file in MS. Word to insert a table in the document. Describe all steps involved in it.

Ans:- (1) Open a blank word document.
(2) In the top ribbon, press Insert.
(3) Click on the table button.
(4) Select the number of columns and rows you need, or click insert table and a dialog box will appear where you can specify the no. of columns and rows.
(5) The blank table will now appear on the page after it as necessary. Standard features like bold, italic and underline are still available. These items may be helpful for creating headings and calling out certain items in the table.

Q11:- Create a following worksheet in MS-excel and save it with name 'book1'.

Ans:- (1) Right-click the worksheet name tabs.
(2) Click select move and copy.
(3) Click on the move selected sheet to book drop-down menu select (new book)
(4) Click OK your new workbook opens with your moved worksheet.
(5) Click file > save in your new work book.

Q12:- Calculate the following things of a range (C2:C11) of dat

in the worksheet created in above question.

(a) the sum of the marks using AutoSum in a range of cells (C2 : C11).

Ans:- (1) To sum a column of number's select the cell immediately below the last number in the column. To sum a row of numbers, select the cell immediately to the right.

(2) Autosum is in two locations: Home > Auto-sum and formulas > Autosum.

(3) Once you create a formula, you can copy it to other cells instead of typing it over and over. e.g, if you copy the formula in cell B12, to cell C12, the formula C12 automatically adjusts to the new location and calculates the numbers in C2:C11.

(4) You can also use autosum on more than one cell at a time.
e.g, you could highlight both cell B12 and C12, click autosum and total both columns at the same time.

(5) You can also sum numbers by creating a simple formula.

(b) Average of the marks in a range of cells (C2 : C11).

Ans (1) Click a cell below the column or to the right of the row of the numbers for which you want to find the average.

(2) On the Home tab, click the arrow next to Autosum > Average, and then press Enter.

(c) highest marks in a range of cells (C2 : C11)

Ans:- (1) In a blank cell, type "=MAX(" ____
(2) Select the cells you want to find the largest number from.
(3) Close the formula with an ending parentheses.
(4) Hit enter and the largest number from your selection will populate in the cell.

(d) minimum marks in a range of cells (C2:C11).

Ans:- (1) Select the cell C2 and write the formula.
(2) =MIN(C2:C11) press Enter on your keyboard.
(3) The function will return 3.
(4) 3 is the minimum value in the range (C1:C11).

Q13 (a) Describe various steps involved in the following.
(i) To modify column width of a worksheet.
Ans (1) Select the column or columns that you want to change.
(2) On the home tab in the cells group, click format.
(3) Under cell size, click column width.
(4) In the column with box, type the value that you want.
(5) Click OK.
(ii) To modify the row or height of a worksheet.
Ans (1) Select the row or rows that you want to change.
(2) On the home tab, in the cells group, click format.
(3) Under cell size, click Row height.
(4) In the Row height box, type the value that you want, and then click OK.
(iii) To delete rows and columns of a worksheet.
Ans (1) Select the cells, rows or columns that you want to delete.
(2) Right-click and then select the appropriate delete option.

e.g, Delete cells and shift up, Delete cells and shift left, Delete Rows or delete columns.

(b) Describe the following terms in the worksheets.

(i) Absolute refrence and relative refrence in formula.

Ans (1) Select the cell that contains the formula.

(2) In the formula bar select the reference that you want to change.

(3) Press F4 to switch between the refrence types.

(ii) Cell Adress

Ans:- A cell is the intersection of a row and a column. Column are identified by letters (A, B, C), while rows are identified by numbers (1, 2, 3), Each cells has its own name -or cell address- based on its column and row. In this e.g, the selected cell intersects column C and row 5, so the cell address is C5.

Q14:- (a) What tools are available to customize our Power Point Presentation?

Ans:- (1) Templates and themes.
(2) Slide layouts
(3) Font
(4) Color Themes.
(5) Icons
(6) Shapes
(7) Stock Photos
(8) Charts and Graphs.
(9) Maps
(10) tables
(11) Flowcharts
(12) Icon charts
(13) Radials
(14) Progress Bars
(15) Animation
(16) Transitions
(17) Interactivity
(18) Audio
(19) Video.

(b) Write the steps for the following action for creation of PowerPoint Presentation.

(i) Open a Blank Presentation.

Ans (1) Select the file tab to go to Backstage view.
(2) Select New on the left side of the window, then click Blank Presentation.
(3) A new Presentation will appear.
(4) Save the Presentation as Lab 1.PPtx.

(ii) Create a Blank Presentation

Ans (1) Create a Blank Presentation
(2) Save a Presentation.
(3) Apply a Design.
(4) Compare Presentation views.
(5) Format Text.
(6) Insert smartart.
(7) Insert and modify shapes.
(8) Edit and Duplicate slides.

(iii) Add a Title to the first slide: the name of your college.

Ans: (1) Select the slide whose layout you will change so that it can have a title.
(2) Click Home > layout.
(3) Select title slide for a standalone title page or select title and context for a slide that contains a title and a full slide text box.

May other layout options include titles, two, Pick the ones that's best suited for your Presentation.

(4) Select the click to add title text box. Enter your title for that slide.

(iv) Type your first name and last name in the Subtitle section.

Ans: (1) Using your mouse and cursor, click inside of the top textbox.
(2) Using your keyboard type the name of the animal you

have been researching in class.
(3) Using your mouse and arrow, click inside of the bottom textbox.
(4) Using your keyboard, type your first and last name, click enter and type your teacher's name.
(5) Add a New Slide which has a title and content.

Ans: (1) Click the "Home" tab in the Ribbon.
(2) Then Click the "new slide" button in the "Slides" button group.
(3) Alternatively, to add a new slide with a different slide layout.
(4) Click the "Home" tab in the Ribbon.

Q15:- Write steps for creation of a set of PowerPoint slides that demonstrates your skill to use the tools of PowerPoint. It should include the following things:
(a) Title slide and bullet list

Ans:- The Title slide is the first slide of a presentation. It usually contains a little and a subtitle of all the slides in a presentation, the first slide is one of the most important as the title slide generally sets the tone.
(1) Click Home > layout.
(2) Select Title Slides for a standalone title page a
(3) Select title and content for a slide that contains a title and a full slide text box.

Bullet list:- (1) On the left-hand slide of the powerpoint window.
(2) Click a slide thumbnail that you want to add bulleted or numbered text.
(3) On the slide, select the lines of text in a text placeholder or table that you want to add Bullets

or numbering to.

(4) On the home tab in the Paragraph group click Bullets or Numbering.

→ Part-2

Q No 16:→ What is the difference between Machine language and High level language?

Ans:→ Machine language: A Machine language is the only language that a computer directly understands, it is usually written in zero(0) and ones (1). A program instruction in machine language may look something like this 11001001o whereas

High level language:- A High level language is a programming language that uses English and mathematical symbols, like +, -, % and many others also.

Q17:- Discuss about different data types of C programming language.

Ans:- There are some common data types in C programming language.

(1) Int – used to store an integer value.
(2) Char – used to store an single character.
(3) float – used to store decimal numbers with single precisions.
(4) double – used to store decimal numbers with double precision.

e.g.,

#include<stdio.h>

```
#include <stdio.h>
int main()
{
    // datatypes
    int a = 10;
    char b = 'A';
    float c = 2.088;
    double d = 28.888;
    printf("Integer datatype: %d\n", a);
    printf("Character datatype: %c\n", b);
    printf("float datatype: %f\n", c);
    printf("double datatype: %lf\n", d);
    return 0;
}
```

O/P (1) Integer datatypes: 10
(2) Char datatypes: S
(3) float datatype: 2.880000
(4) double float datatypes: 28.888000

Q18:- Find the output of the following expression.

(a) $X = 20/5 * 2 + 30 - 5$

Sol:- $X = \frac{20}{5} \times 2 + 30 - 5$

$X = 4 \times 2 + 30 - 5$

$X = 8 + 30 - 5$

$X = 8 + 25$

$\boxed{X = 33}$

Hence the value of x is 33

(b) $Y = 30 - (40/10 + 6) + 10$

Sol:- $Y = 30 - 4 + 6 + 10$

$Y = 30 - 0$

$\boxed{Y = 30}$

Hence, the value of Y is

(c) $Z = 40 * 2 / 10 - 2 + 10$

Sol:

$$Z = \frac{40 \times 2}{10} - 2 + 10$$

$Z = 8 - 2 + 10$

$Z = 8 + 8$

$\boxed{Z = 16}$

Hence, the value of Z is 16

Q19: Describe the syntax of the following statements.

(a) If-else statement

Ans:

```
#include<iostream>
using namespace std;
int main ()
{
  int number;
  cout << "Enter an integer: ";
  cin >> number;
  if (number > 0)
  {
    cout << "you entered a positive
    integer: " << number << endl;
  }
  else if (number < 0)
  {
    cout << " you entered a negative intg.
    " << number << end l;
  }
```

```
else
{
    cout << " This line is always
    printed ";
    return 0;
}
```

O/P

Enter an integer;

(b) for loop

Ans

```
#include <stdio.h>
#include <conio.h>
int main ( )
{
    int i;
    for (i=0; i<10; i++)
    {
        printf ("Hello World");
    }
}
```

O/P

10 times write Hello World

(c) While loop

Ans:

```
#include <stdio.h>
int main()
{
    int i = 0;
    while (i<10)
    {
        printf (" Hello World");
        i++
    }
}
```

O/P

10 time write Hello world.

(d) do-while loop

Ans:

```
#include <iostream>
using namespace std;
int main()
int i = 1;
do
{
cout << i << "\n";
i++
while (i <= 10);
}
```

O/P

1 to 10

Q20. Find the output of the following program segments

(a)

```
#include <stdio.h>
int main()
{
int i;
for(i=1; i<2; i++)
{
Printf("IMS Ghaziabad\n");
}
}
```

Ans:

O/P

IMS Ghaziabad

(b)
```
#include <stdio.h>
int main()
{
  int = 1;
  while (i <=2)
  {
  Printf("Ims Ghaziabad \n");
  i=i+1;
  }
}
```

Ans: O/P Two times written Ims Ghaziabad.

(c)
```
#include <stdio.h>
void main()
{
  int a=10, b=100;
  if (a>b)
  Printf("largest number is %d\n", a);
else
  Printf("Largest number is %d\n", b);
}
```

Ans:- O/P larger number is b.