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Course code - CCA 101
Course Name - Fundamentals of I.T & Programming

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CCA-101: Fundamentals of IT and Programming

Assignment-1

Qno1:- What are the four fundamental parts of computer? Explain it with the help of diagram.

Ans:- A computer has four main components:
- → Input units,
- → The central Processing unit or CPU,
- → The Primary memory and
- → Output units.

Input Unit:- The devices to input information, such as keyboard, and mouse.
CPU:- The CPU is further broken up into ALU, Control Unit, and Instruction Unit.

Qno2:- 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

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Super computers

⇒ Super computers are the most powerful and physically the largest by size.
⇒ These are system designed to process huge amount of data.
⇒ The fatest supercomputers can perform over one trillion calculations in a second.
⇒ Super computers have thousands of processors.
⇒ Because of their extraordinary speed, accuracy and processing power, super computeles are well suited for solving highly complex problems and huge amount of calculations.
e.g. Jaguar, ROADRUNNER etc.

Mainframe Computers

⇒ Mainframe computers are very large often filling an entire room and can process thousands of millions of instructions per second.
⇒ In a mainframe environment, users connect to the mainframe through the many terminals wired to the mainframe.
⇒ Mainframe are capable of supporting hundreds to thousands of users simultaneously.
⇒ Some of the functions performed by a mainframe include: flight scheduling, reservations and ticketing for an airline etc.
e.g IBM mainframe Z13, IBM System Z9 mainframe.

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Minicomputers

⇒ Minicomputers are much smaller than mainframes.
⇒ These computers are also less expensive.
⇒ Sometimes referred to as Midrange servers or Midrange computer.
⇒ They are typically larger, more powerful and more expensive than desktop computers.
⇒ Midrange computers are usually used by small and medium-sized businesses as their servers.
⇒ Users connect to the server through a network by using desktop computers.
e.g Apple iPod, CDC 160A.

Microcomputers

⇒ Microcomputers are the most frequently used type of computer.
⇒ It is also known as Personal computer. (PC)
⇒ A microcomputer is a small computer system designed to be used by one person at a time.
e.g: Desktop computers, laptops,

Q no 3:- What is the meaning of Computer generations? How many computer Generations are defined? Which technologies were/are used?

Ans:- The generation term was used to distinguish between varying hardware tech

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nologies.

Nowadays, generation includes both hardware and software, which together make up an entire computer system.

There are five generations of computer.

(1940-1956) Vacuum Tubes

First Generations :- The computers of first generation used vacuum tubes as the basic components for memory and circuitry for CPU (Central Processing Unit).

These tubes, like electric bulbs, produced a lot of head and the installations used to fuse frequently.

2nd Generations :- (1956-1963) Transistors

A transistor computer, now often called a second-generations computer which used discrete transistors instead of vacuum tubes.

Second generation computers still relied on punched cards for input and printouts for output

Second generation computers moved from binary machine language to symbolic, or assembly languages.

3rd Generations (1964-1971) Integrated Circuits

Transistor were replaced by Integrated circuits, which drastically increased the speed and efficiency of computers.

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Instead of punched cards and printouts, users interacted with third generation computers through keyboards and monitors.

⇒ Computers for the first time became accessible to a mass audience because they were smaller and cheaper than their predecessors.

4th Generation:- Microprocessors (1971-present)

⇒ The microprocessors brought the fourth generation of computers as thousands of integrated circuits were built into a single silicon chip.

⇒ What is the first generation filled an entire room could now fit in the palm of the hand.

⇒ In 1981, IBM introduced its first computer for the home user.

⇒ In 1984, Apple introduced the Macintosh.

⇒ Microprocessors also moved out to the desktop computers.

⇒ Fourth generation computers also covered the development of Graphical user Interface (GUIs), mouse and handheld devices.

5th Generation

The key technologies for the fifth Generation computer system (FGCS) seem to be VLSI architecture, parallel processing such as data flow control, logic programming, knowledge base based on relational

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database, and applied artifical intelligence and pattern processing.

Q.No4:- ~~what~~ Differentiate between volatile & Non-Volatile memories.

Ans:- Volatile / Primary Memory:-

Volatile memory is a computer storage that only maintains its data while the device is powered eg RAM. (Random Access memory) is volatile. When we are working on a document, it is kept in RAM, and if the computer loses power, your work will be lost.

-> Non-volatile / Secondary memory:-

Non-volatile memory is a type of computer memory that has the capability to hold saved data even if the power is turned off.

eg. RoM (Read Only Memory), Hard disk, floppy disk, etc.

Q.No5:- Distinguish among system software, application software and open source software on the basis of their features.

Ans:- System Software:-

It is a type of software that is designed to run a computer's hardware and application programs.

Software like operating system, compilers, editors and drives etc. come under this category.

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A computer cannot function without the presence of system software.

If we think of the computer system as a layered model, the system software is the interface between the hardware and user applications.

Operating System (OS)

⇒ It is system software that manages computer hardware and software resources and provides services.

⇒ Operating system acts as a manager of all the resources of computer i.e. resource manager.

Application Software.

It is software created for a specific purpose, used by end users. It can be called an application or simply an app.

e.g: Word processor, accounting application a web browser, an email client, media player etc.

Some other type of Software

Utility programs

⇒ These programs analyze and maintain a computer.

⇒ These program are focused on how OS works to perform the task to enable the smooth functioning of computer.

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This program may come along with OS like windows defender, windows disk cleanup tool, Antivirus backup software, files manager, disk compression tool all are utility software.

Proprietary Software

⇒ It is software that is owned by an individual or a company (generally the one that developed it).

⇒ There are almost always major restrictions on its use, and its source code is almost always kept secret.

⇒ The proprietary software is a non-free computer software for which the software's publisher or another person retains intellectual property rights usually copyright of the source code.

⇒ It is also known as "closed-source software".

Open Source software OSS

⇒ It is a type of computer software in which source code is released under a license in which the copyright holder grants users rights to study, change and distribute the software to anyone and for any purpose.

⇒ The Linux operating System (OS) is the best known example of open source software.

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Q.No6:- 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 Step 1: Open MS Word on your system

Step 2: Click on the new file when you open the word file when the dialog box appear.

Step 3:- Once this click on Blank doc under the recent section, it will get in bold or highlighted by default.

Step 4:- Click on the create A new blank doc will open.

Step 5:- Once it is opened you can write anything you want in the doc for yourself.

Step 6:- You can also edit the text you have written as you can change the background color, or the text and many other things in the docs.

Q.No6 b) Write steps regarding following

→ To change the font style
→ To change the font size
→ To change the font color
→ To highlight (in yellow) the line that reads "need to get IMS's address".

Ans:- To change the font style

1. Select the text you want to modify.

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2. Select the Home Tab and locate the font group.
3. Click the drop-down arrow next to font style box.
4. Font style menu appears.
5. With a left click select the desired font style.
6. If you want to change the font to bold or Italic, click the 'B' or 'I' icons on the format bar.

→ To change the font size.

1. Select the text you want to modify.
2. Click the drop-down arrow next to the Font size box on the Home Tab. A drop-down menu appears.
3. Select the desired font size from the menu. Alternatively, you can type the value you want and then press Enter on your keyboard.

Changing the font size.

→ To change the font color

1. Select the text you want to modify.
2. In Home Tab locate the Font group.
3. Click the drop-down arrow next to Font color button.
4. Font color menu appears.
5. Select the desired font color with a left click.
6. Word will change the font color of the selected text.

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→ To Highlight (in yellow) the line that reads "need to get JMS's address."

1. Select your text. you can do this by simply dragging through it with your cursor.
2. Go To the Home Tab.
3. Click the arrow next to the Text Highlight color button.
4. Choose the yellow color from the drop-down menu.

Q.No7: Create a file in MS word for the following documents and save it with file 'ms-word'. Describe all steps involved in it.

MS word

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

- Creating,
- editing,
- Saving
- Printing any type of document

Q1 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.

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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 to edit.
3. Using the tool in the edit toolbar, Change the required formatting including font style, paragraph alignment, list formatting, and indentation options.

Saving

To save document using save as command:
→ Click the Microsoft office button / File tab.
→ Select save as - Word document
→ Select the location where you want to save the document using the drop-down menu.
→ Enter a name for the document
→ Click the save button.

Other command to save document:

First Method

→ Click the Microsoft office button or file tab.
→ Select save from the menu.

Second method

→ Click save command on Quick access toolbar

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Third Method

→ Press Ctrl + S key on keyboard.

To Save document as a PDF File:

→ Click the MS office button or file tab
→ Select save as - PDF
→ Select the location where you want to save the document using the drop-down menu.
→ Enter a Name for the Document
→ Click the Publish / Save button.

Printing any type of document

→ Select File > Print.
→ To preview each page, select the forward and backward arrows 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.
→ Choose the number of copies, and any other options you want, and Select the Print button.

Q no 8:- Create a file in MS word for the following document and save it with the file name 'equations.' Describe all steps involved in it.

e.g Equations

$X_2 + Y_5 = 30$

$Z^3 + Q^4 = 50$

$A_2 + B^8 = X_2 + Y^8$

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Ans → Select Insert > Equation or Press Alt + =

→ To use a built-in formula, select Design > Equation.

→ To create your own, select Design > Equation > Ink Equation.

→ Use your finger, stylus, or mouse to write your equations.

→ Select insert to bring your equation into the file.

Q.No9:- 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 to convert	Select the Insert Tab
Click on Table command. A	Click on Convert Text to Table
dialog box appears.	a new dialog box appears.
here set numbers of columns	Click on Ok finally Selected
	text convert in a Table

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Ans:- 1. Select the text and make sure it's properly formatted

Word will insert a new colouuuu when a tab characters 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 be already be filled in. Otherwise, set the numbers of columns and rows, and how to separate the text into columns.

5. (optional) Customize AutoFit behavior.
6. Click ok.

The selected text is automatically turned into a table.

Q.no 6:- 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 number of columns and rows.
5. The blank table will now appear on the page. Alter it as necessary. Standard features like

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bold, italics, and underline are still available. These items may be helpful for creating heading or calling out certain items in the table.

Q.No 11:- Create a following worksheet in MS-Excel and save it with name 'book1'.

	A	B	C
1	RollNo	Name	Marks
2	1	u1	60
3	2	u2	70
4	3	u3	80
5	4	u4	90
6	5	u5	77
7	6	u6	44
8	7	u7	88

Ans: 1. Right-Click the worksheet name tab.
2. Click select Move or 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 workbook.

Q.No 12:- Calculate the following things of a range (C2:C11) of data in the worksheet created in question no 10.

→ the sum of the marks using Autosum in a range of cells (C2:C11)

→ average of the marks in a range of cells (C2:C11)

→ heighest marks in a range of cells (C2:C11).

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

Eg:- → To sum a column of numbers, select the cell immediately below the last number in the column. To sum a row of numbers, select the cell immediately to the right.

→ Autosum is in two locations: Home > Autosum, and Formulas > AutoSum.

→ 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.

→ 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.

→ you can also sum numbers by creating a simple formula.

→ average of the marks in a range of cells (C2:C11)

→ Click a cell below the column or to the right of the row of the numbers for which you want to find the average.

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

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→ highest marks in a range of cells (C2:C22)

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 parenthesis.
4. Hit enter and the largest number from your selection will populate in the cell.

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

1. Select the cell C2 and write the formula.
2. =MIN(C2:C22), press Enter on your keyboard
3. The function will return 3.
4. 3 is the minimum value in the range (C2:C22).

Q.no 3a) Describe various steps involved in the following

→ To modify column width of a worksheet.

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 width box, type the value that you want.
5. Click OK.

→ To modify the row height of a worksheet.

1. Select the row or rows that you want to change.
2. On the Home tab, in the cells group, click format.

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2. Under cell Size, click Row height.
4. In the Row height box, type the value that you want, and then click OK.

→ To delete rows and columns of a worksheet

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.

Q13b) Describe the following terms in the worksheet.

→ Absolute reference and relative reference in formula.

→ Cell Address.

→ 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 reference types.

→ Cell Address

⇒ A cell is the intersection of a row and a column. Columns 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 columns and row. In this e.g. the selected cell intersects column C and row 5, so the cell address is C5.

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Q no 14:a) What tools are available to customize our power point presentation?

A 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 and video

(b) write the steps for the following action for creation of power point presentation.

=> open a Blank presentation.

-> Select the File tab to go to Backstage view.

=> Select New on the left side of the window, then click Blank Presentation.

=> A new presentation will appear.

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→ Save the presentation as lab1.pptx
→ Create a Blank presentation
→ Save a presentation
→ Apply a Design Theme
→ Compare Presentation views
→ Format Text
→ Insert SmartArt
→ Insert & Modify Shapes
→ Edit and Duplicate Slides.

→ Add a title to the first slide: the name of your college.
→ Select the slide whose layout you will change so that it can have a title.
→ Click Home > Layout
→ Select Title Slide for a standalone title page or select Title and content for a slide that contains a title and a full slide text box.
Many other layout options include titles, too. Pick the ones that's best suited for your presentation.
→ Select the Click to add title text box. Enter your title for that slide.

→ Type your first name and last name in the subtitle section.
→ Using your mouse and cursor, click inside of the top Textbox.
→ Using your keyboard, type the name of the animal you have been researching in class.

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→ Using your mouse and cursor, click inside of the bottom textbox.
→ using your keyboard, type your first and last name, click enter, and type your teacher's name.

→ Add a new slide which has a title and content
→ Click the "Home" tab in the Ribbon.
→ Then click the "new Slide" button in the "Slides" button group.
→ Alternatively, to add a new slide with a different slide layout.
→ Click the "Home" tab in the Ribbon.

Q no 15: 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
→ Title slide & bullet list.

Ans Title Slide

The title Slide is the first slide of a presentation. It usually contains a title and a subtitle. Of all the slides in a presentation, the first slide is one of the most important, as the title slides generally sets the tone.

→ Click Home > layout
→ Select Title slides for a standalone title page or
→ Select Title and content for a slide that contains a title and a full slide text box.

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→ Bullet list

→ On the left-hand side of the Powerpoint window.
→ Click a slide thumbnail that you want to add bulleted or numbered text to.
→ On the slide, select the lines of text in a text placeholder or table that you want to add Bullets or numbering to.
→ On the Home tab, in the Paragraph group click Bullets or Numbering.

→ Inserting Excel sheet

→ In PowerPoint, On the Insert tab.
→ Click or tab object.
→ In the Insert object dialog box
→ Select Create from file.
→ Click or tap Browse and in the Browse Box.
→ Find the Excel Workbook with the data you want to Insert and link to.
→ Before you close the Insert and object box, Select Link and click ok.

→ Clip art and Text

→ Open the Powerpoint and go to "Insert" > "Online Pictures".
→ Select the clip art. A window pops up, and you can type a word or phrase that will describe the Images you search for, Then Press the Enter key.
→ Insert the Clip Art. You can filter the results by "Type."

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→ Slide show effects

Ans → Select the object or text you want to animate
→ Select Animations and choose an animation.
→ Select Effect options and choose an effect.
Manage animations and effects
→ On click - Start an animation when you click a slide.
→ With Previous - Play an animation at the same time as the previous animation in your sequence.
→ ~~(After Previous - Start an animation at the same time as the previous animation)~~
→ After Previous - Start an animation immediately after the previous one happens.

→ Duration - lengthen or shorten an effect.
→ Delay - Add time before an effect runs..

Part 2

Q No 6:- What is the difference between Machine Language and High Level Language?

Ans

A machine language is the only language that a computer directly understands, it is usually written in zeros (0) and ones (1). A program instruction in machine language may look something like this 1110101110011 whereas,

A high-level language is a programming language that uses English and mathematical symbols, like +, −, % and many others, in its instructions.

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Q.No 7:- Discuss about different data types of C Programming language.

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

→ Int - used to store an Integer value.
→ Char - used to store a single character.
→ float - Used to store decimal numbers with single precision.
→ double - Used to store decimal numbers with double precision.

eg

```
# Include > stdio.h >
    int main () {
     // datatypes
    int a = 10;
    char b = 'S';
    float c = 2.88;
    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 %.2f \n", d);
return 0;
    }
```

output

Integer datatype : 10
Character datatype : S
float datatype : 2.880000
Double float datatype : 2.888000

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Q No 18: Find the output of the following expression.

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

OR $x = \frac{20}{5} \times 2 + 30 - 5$

$x = 4 \times 2 + 25$

$= 8 + 25$

$= \boxed{33}$

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

OR $Y = 30 - (\frac{40}{10} + 6) + 10$

$= 30 - (4 + 6) + 10$

$= 30 - 10 + 10$

$= \boxed{30}$

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

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

$Z = \frac{80}{10} - 2 + 10$

$= 8 - 2 + 10$

$= \boxed{16}$

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Qno19. 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 integer:" << number
        << endl;
}
else {
  cout << "you entered 0." << endl;
  }
  } cout << "This line is always printed.";
  return 0;
  }
```

output

Enter an integer:

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b) for loop

As
```
# include <stdio.h>
int main()
{
int i;
for (i = 0; i < 10; i++)
{
Printf ("Hello world");
}
return 0;
}
```

Output

Hello world Helloworld Hello world
Hello world Hello world Hello world
Hello world Hello world Hello world
Hello world.

c) while loop

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

output

Hello world Hello world Hello world
Hello world Hello world Hello world
Hello world Hello world Hello world
Hello world

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d) do-while loop

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

Output

1 2 3 4 5 6 7 8 9 10

Q.No20 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");
}
}
```

Output

IMS Ghaziabad.

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

Output

IMS Ghaziabad
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);
}

Output

Largest number is 100