Computer-6

CHAPTER-1
HISTORY OF COMPUTERS

A. 1. (a) 2. (c)
3. (c) 4. (c)
5. (c) 6. (b)
7. (b) 8. (a)

B. 1. Personal Computer
2. Abacus
3. Stepped Reckoner
4. vacuum tubes
5. Visual Aids
6. Maps

C. 1. T 2. T
3. F 4. F
5. T 6. T

D. 1. **Characteristics of first-generation computers are:**

- Vacuum tubes were used in circuits.
- These computers are very large in size.
- Programming for this generation was done using machine language.
- They were very expensive and require a large amount of electricity.
- They produce more heat.
- These computers could calculate data in millisecond.
- The technology used by first-generation computers is vacuum tubes.

2. **Minicomputer**

Minicomputers are mid-sized computers that fall between mainframes and microcomputers.

Example: DEC, PDP series.

They are different from other types of computer as:

- They are smaller and less powerful than mainframes but more robust than microcomputers
- They are used for tasks that require more processing power than microcomputer could provide but didn't demand the scale and capabilities of mainframes.

3. **Visual Aids:** Visual aids are objects, images, or other materials that help enhance the learning experience by providing visual support for the information being presented. Visual aids play a crucial role in making learning more engaging and understandable.

4. There are give generation of computer.

1. **First Generation Computers**

The first generation computers were used during 1940-1956. They were based on vacuum tbes.

2. **Second Generation Computers**

As transistors developed, it helped in generating computers better than first generation.

3. **Third Generation Computers**

During the period of 1964 to 1971, third generation computers were developed.

4. **Fourth Generation Computers**

From 1972 onward the computers that we use for daily purposes are from the fourth generation.

5. **Fifth Generation Computers**

Fifth generation computers are still is development.

5. 1. Images and Photographs: Displaying relevant images and photographs helps students visualise concepts, people, or places being discussed in the lesson.

2. Charts and Graphs: Simple charts and graphs help in presenting data and numerical information in a visual format, making it easier for students to comprehend.

E. 1. Do your self
2. Do yourself

CHAPTER-2
ADVANCE MS WORD

A. 1. (b) 2. (b)
3. (c) 4. (a)
5. (b) 6. (b)

B. 1. cell
2. Merging cell 3. formatting
4. smaller cells 5. Insert

C. 1. T 2. T
3. T 4. F 5. F

D. 1. A table is made up of rows and columns. Tables are used to organise and represent information. The intersection of a row and column is called a cell. Each cell can contain text, paragraphs, or graphics.

2. To insert table into a word document :
   1. **Open Microsoft Word:** Launch Microsoft Word 2016 and open a new or existing document where you want to insert the table.
   2. **Place Cursor:** Click to place the cursor in the location of the document where you want the table to appear.
   3. **Insert Table:** Navigate to the ''Insert'' tab on the Word ribbon at the top of the window.
   4. **Click on ''Table'':** In the "Tables" group, you'll see the option to Table. Click on it to open the drop-down menu.
   5. **Select the Number of Rows and Columns:** In the drop-down menu, hover over the grid to select the number of rows and columns for your table. Click on the grid to select the desired number of rows and columns.
   6. **Insert Table:** Once you've selected the number of rows and columns, click on the grid. Word will insert the table into your document at the location where you placed the cursor.
3. Difference between rows and columns in a table is that a column arrange data vertically from top to bottom, which a raw arranges data horizontally from left to right.
4. Merging cells in a table refers to combining two or more adjacent cells into a single larger cell. This feature is commonly used to create headers or titles that span across multiples columns in a table. Merging cells in MS Word tables helps create a more visually appealing layout and allows for better organisation of information.
5. **To Insert a new row in an existing table:**

- Position the cursor in the table where you would like to insert a row.
- Select the layout tab under Table Tools.
- Click either the Insert Above or Insert Below row buttons Rows & Columns Group.

6. **To delete a table in Word document:**
   1. Selected the table you want to delete
   2. Access the Table Tools Tab
   3. Click the Table Layout or Table Tools Layout tab in the Ribbon.
   4. Click delete in the Rows and columns group. A drop down menu appears.
   5. Select Delete table.

E. 1. Do yourself
2. Do yourself

CHAPTER-3
MORE ON MS POWER POINT

A. 1. (b) 2. (b)
3. (c) 4. (b) 5. (b)

B. 1. slides 2. Placeholder
3. Text 4. Transitions
5. Entrance

C. 1. T 2. F
3. T 4. T 5. F

D. 1. The purpose of using animations in Powerpoint presentations is that it helps capture the audience's attention, emphasise key points, and make presentations more engaging and dynamic.

2. Entrance effects make an object appear. Exit effect make an object disappear. Emphasis effects draw attention to an already-visible object.

3. Transitions provide a dynamic way to move from one slide to the next during a slide show. We can add a transition to just one slide, different transitions to different slides, or the same transition to all slides. Power Point makes it easy to apply transitions to some or all slides, giving presentation a polished, professional look.

4. 1. Select the desired slide form the slide Navigation pane. This is the slide that will appear after the transition.
   2. Click the Transitions tab, then locate the Transition to this slide group. By default, None is applied to each slide.
   3. Click the More drop-down arrow to display all transitions.
   4. Click a transition to apply it to the selected slide. This will automatically preview the transition.

5. 1. Select the object want to animate.
   2. On the Animations tab, click the More drop-down arrow in the Animation group.
   3. A drop-down menu of animation effects will appear. Select the desired effect.
   4. The effect will apply to the object will have a small number next to it to show that it has an animation. In the slide pane, a star symbol also will appear next to the slide.

6. Transition effects are animation options with in a presentation. Transition effects arte divided into three categories: Subtile, Exciting and Dynamic content.

   A slide transition is the visual effect that occurs when you move from one slide to the next. Transition effects can control the speed and sound and customize the look.

E. 1. Do your self
2. Do your self
3. Do your self

CHAPTER-4
MS EXCEL

A. 1. (a) 2. (b)
3. (d) 4. (c) 5. (c)

B. 1. Spreadsheet 2. A worksheet
3. workbook 4. Cells
5. worksheet

C. 1. T 2. T
3. T 4. T 5. F

D. 1. A worksheet or sheet is a single page in a file created with an electronic spreadsheet program such as Microsoft Excel or Google Sheets. A workbook is the name given to an Excel file that contains one or more worksheets. When we open an electronic spreadsheet program, it loads an empty workbook file consisting or one or more blank worksheets for us to use.

2. Ms Excel is a commonly used Microsoft office application and it is available for windows, mac0S, Android, etc. It is a spreadsheet program which is used to save and analyse numerical data. In Ms Excel, formulas and functions are used for calculations, charts are used for graphical representation of data.

   The tasks that we can do in Excel are:

- Entering tabular data
- To calculate large data
- To analyse student performance
- To interpret data
- Maintaining student records

3. Cells are the basic building blocks of a worksheet. Each rectangle on a worksheet is called a cell. The intersection of rows and columns is called a cell. A cell is identified by a combination of column name and row number.

   The active cell is surrounded by bold line border, which is called cell pointer. The cell on. of the active cell will be displayed in name box. We mostly refer to a cell by its cell no. in other cells, worksheets, functions, formulas.

4. 1.Click Start button.
   2. Click Excel 2016.
   3. Select blank workbook.
   4. A blank workbook will appear.
   5. To modify that data of a cell:
      (a) Double-click the cell with the text that we want to edit.
      (b) Highlight the text that we want to change, or type in the text we want to add.
      (c) Press enter to apply the changes, or press Escape (ESC) to cancel editing.

E. 1. Do yourself
2. Do yourself
3. Do yourself
4. Do yourself
5. Do yourself

F. 1. Do yourself

CHAPTER-5
COMPUTER LANGUAGE

A. 1. (b) 2. (c)
3. (b) 4. (c) 5. (c)

B. 1. programming
2. Assembly
3. Object oriented
4. binary
5. Interpreter

C. 1. T 2. T
3. F 4. T 5. T

D. 1. (c) 2. (a)
3. (e) 4. (b) 5. (d)

E. 1. Low level languages are the basic computer instruction or better known as machine codes. A Computer cannot understand any instruction given to it by the user in English, Hindi or any other high level language. These low level languages are very easily understandable by the machine. This language is to interact with the hardware of the computer.

It is different from high level language as.

High level language	**Low-level language**
• These are programmer friendly languages	• These are machine friendly languages
• They do not depend on machines	• They are machine dependent and very difficult.
• Some examples are PASCAL, FORTAN, C++, etc	• Some examples are machine language and Assembly language.

2. The different generation of programming languages are :

- 1st Generation Language
- 2nd Generation Language
- 3rd Generation Language

- 4th Generation Language
- 5th Generation Language
- 6th Generation Language

Over time, programming languages have evolved to become more expensive, efficient and versatile.

3. High level languages are programming languages. Some prominent examples are PASCAL, FORTRAN, C++, etc.

   The important feature of high level languages is that they allow the programmer to write programs for all types of computers and systems. Every instruction in high level language is converted to machine language for the computer to comprehend.

4. The characteristics and key features of each generation of programming languages are:

(a) **1st Generation Language**
- Translation of program is not required
- Program execution is very fast.
- It is efficient for the computer.

(b) **2nd Generation Language**
- It is easy to understand.
- It requires less no. of instructions.
- Modification can be done easily.
- It is memory efficient.

(c) **3rd Generation Language**
- It is machine independent.
- Debugging is easy.
- Easy to learn.
- Less errors with more productivity,

(d) **4th Generation Language**
- Development is fast.
- Easy to maintain.

(e) **5th Generation Language**
- Machines make decisions.
- Easier to learn and use than other languages.
- It solve problem with less effort.

5. This is also called as Natural Language. The fifth generation programming language (5GL) is based on problem-solving. It uses constraints given to the program instead of an algorithm written by a programmer. It solves problems on its own using artificial intelligence or AI technology.

E. 1. Do your self

CHAPTER-6 INTRODUCTION TO PYTHON

A. 1. (c) 2. (a)
3. (b) 4. (a) 5. (b)

B. 1. .py 2. lengthy
3. Values 4. interactive
5. Title bar

C. 1. F 2. T
3. F 4. T 5. F

D. 1. Do your self

2. Different working mode of python are:

   Interactive Mode: In this mode, the code is executed line by line and generate the output. Commands are type next to the command prompt. Interactive mode produces output that is displayed on the screen and then disappears.

   Script Mode: This mode is used when the user is working with more than one single code or a block of code.

3. The use of print ( ) function is used to display the output of any command on the screen. It can also be used to print any message.

4. For application areas of Python are :
   (1) Python can be used to make web-applications.
   (2) Python is also used in the development of interactive games.

(3) Python in used to develop artificial applications.

(4) This language is also used for the programming of robots.

5. Variables are used to store data, while data types, such as integers, floats, and strings, define the nature of the stored information.

E. Do yourself

CHAPTER-7
IMAGE PROCESSING BASICS WITH GIMP

A. 1. (d) 2. (b)
3. (a) 4. (a) 5. (c)

B. 1. spray paint 2. Ellipse select
3. Layers 4. scale
5. Smudge

C. 1. (T) 2. (T)
3. (T) 4. (T) 5. (F)

D. 1. GIMP is a freeware and open source graphic editing tool. It is an acronym of GNU Image Manipulation Program. This software is used for image editing and retouching, free form drawing, converting images into different formats and for more specialised

2. (a) Text tool : It is used to add text on the image.

(b) Brush : It allow us to paint.

(c) Pencil : It is used to draw free hand lines with a hard edge.

(d) Smudge : It is used to give wet paint effect of an image.

(e) Gradient : It is used to fill the selection with a colour bend.

3. Five major parts of GIMP windows are:

(1) Menu Bar

(2) Toolbox

(3) Docks or Dialogs Area

(4) Canvas or Image

(5) Status Bar

4. Three properties of GIMP tool are :

Rounded corners: This property sets the roundedness of the corners of a rectangular selection.

Opacity: This property sets the transparency/opacity of the colour.

Feather edges: Selection tools have this property to define how much part around the selection would be little blur.

5. Filters are special effects that can be applied to an image or a selected region. Filters enhance the look of the image. Filters are organized in several categories available as submenus under the Filters menu.

To apply a filter:

Select the desired region in the image on which filter is to be applied.

Select desired filter from the set of submenus under Filters menu.

E. Do yourself

CHAPTER-8
INTERNET

A. 1. (b) 2. (c)
3. (a) 4. (b)

B. 1. Internet 2. Tim Berners-Lee
3. Web 4. search engine
5. symbols

C. 1. F 2. T
3. T 4. T 5. T

D. 1. Opera 2. Safari
3. Internet Explorer 4. Firefox
5. Chrome 6. Edge

E. 1. World wide web

2. Advance Research Project Agency Network

3. Uniform Resource Locator

4. Department of Defence

F. 1. A search engine is a software system that allows Internet users to search

for content via the World Wide Web (WWW). A user enters keywords or key phrases into a search engine and receives a list of Web content results in the form of websites, images, videos or other online data that best match with the search query.

Some of the search engines are : Yahoo!, Google, etc

2. The Internet is a vast global network that connects computers all over the world. Through the Internet, people can share information and communicate from anywhere with an Internet connection. It also helps in the transfer of messages through mail, chat, video & audio conference, etc.
3. • History of Internet—

   In 1960, the technology began when USSR launched it's satellite named sputnik.
   - At the end of 19th century, the Internet was came into existence with the structure of sharing messages, information, etc.
   - In 1960, the Internet began as a project called ARPANET
   - In 1970, the Internet grew, connecting more places.
   - In 1989, a person named Tim Berners-Lee created the World Wide Wed (WWW) to make it easy for scientists to share information.
   - In 1990, The Internet became available to everyone. Websites, email, and services like AOL (America Online) became popular.
   - Late 1990's, many new companies started online. This was called the dot-com boom.
   - In 2000, social media like Facebook and Twitter became popular.
   - In 2007. the iPhone came out, and now people could use the Internet on their phones.
   - Today, the Internet is a huge part of our lives.
4. (a) A web browser is the software installed on your computer or mobile that allows you to view web pages. On the web, when you navigate through pages of information, this is commonly known as web browsing or web surfing.

   (b) The world Wide Web (WWW) was developed in 1991 by Tim Berners-Lee. World Wide Web, is also known as a Web, is a collection of websites or web pages stored in web servers and connected to local computers though the Internet. These websites contain text pages, digital images, audios, videos, etc.

   (c) A website is like a digital place on the Internet where you can find information, play games, watch videos, and do many other things. It's like a virtual space where you can explore and learn.

   (d) A web address, or URL (Uniform Resource Locator), is like the address of a house on the Internet. It tells computer where to find a specific website.

CHAPTER-9
ARTIFICIAL INTELLIGENCE

A. 1. (b) 2. (b)
3. (b) 4. (b)
5. (c) 6. (b)
7. (c) 8. (b)
9. (b) 10. (b)

B. 1. diseases
2. AI
3. The Virtual Tutors

4. Technical issues
5. Radiology
6. Predictive Maintenance.
7. Chatbots
8. help
9. Privacy and Fairness
10. Sensors

C. 1. F 2. T
3. F 4. F
5. T 6. T
7. F 8. F
9. F 10. F

D. 1. Artificial intelligence refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions or solving Problems. AI is different from traditional computer programming as AI is about creating algorithms that allow computer to learn from data and make decisions or predictions, which traditional computer programming does not.

2. Artificial Intelligence (AI) has emerged as a transformative force in the field of healthcare, revolutionising the way medical professionals diagnose diseases, treat patients, and manage healthcare systems. From personalised medicine to predicitve analytics, AI is reshaping the landscape of healthcare delivery in profound ways.

3. 1. Increased Efficiency: AI optimises production processes, reducing time and costs.
   2. Improved product Quality: AI enhances quality through precise monitoring and control.
   3. Enhanced Customer Experience: AI personalises shopping experiences and improves customer service.
   4. Inventory Management: AI ensures optimal stock levels, reducing overstock and stockouts.
   5. Predictive Analytics: AI forecasts demand, helping manufactures and retailers plan better.

4. The role of artificial intelligence in education and its potential to personalise learning experience for students are :
   1. Personalized Learning : AI tailors lessons to each student's needs and abilities.
   2. Interactive Learning : AI provides engaging, interactive learning experiences for students.
   3. Efficient Feedback: AI gives instant feedback to students, helping them improve faster.
   4. Accessibility: AI enables learning form anywhere, making education more accessible.
   5. Teacher Support: AI assists teachers with grading, lesson planing, and individualised instruction.

5. 1. Initial Investment: Implementing AI Technology requires significant upfront costs of farmers.
   2. Dependency on Technology: Overreliance on AI may reduce farmer's traditional farming skills.
   3. Data Security Risks: AI systems store sensitive agricultural data, raising concerns about privacy and security.
   4. Limited Access: Small-scale farmers may have limited access to AI technology due to cost and infrastructure constraints.
   5. Ethical Concerns: AI decision-making may rise ethical questions regarding crop managements and biodiversity.

❑❑

Computer-7

CHAPTER-1
NUMBER SYSTEM

A. 1. (c) 2. (a)
3. (c) 4. (c)
5. (d)

B. 1. A binary
2. decimal
3. Most
4. numbers
5. alphanumeric
2. Binary Number is : $(11000000111001)_2$

1	1	0	0	0	0	0	0	1	1	1	0	0	1
13	12	11	10	9	8	7	6	5	4	3	2	1	0
1×2^{13}	1×2^{12}	1×2^{10}	1×2^{10}	1×2^{9}	1×2^{8}	1×2^{7}	1×2^{6}	1×2^{5}	1×2^{4}	1×2^{3}	1×2^{2}	1×2^{2}	1×2^{0}
8192	4092	0	0	0	0	0	0	32	16	8	0	0	1

= 8192 + 4096 + 32 + 16 + 8 + 1 = 12345

3. **Advantages and disadvantages of Binary Number System :**

Advantages :

- Data can be stored and sent with ease since all potential values are represented by two symbols 0 and 1.
- It is a base which is easily represented by electronic devices.

Disadvantages :

- Difficult for most people to read.
- Takes a lot of digits to represent any reasonable number.

Decimal Number System :

Advantages :

- Easy readability
- Used by humans
- Easy to manipulate

Disadvantages : Wastage of space and time.

Octal Number System :

Advantages : It is easy to convert to any other number system; because of less digits.

Disadvantages : Computer does not understand the octal numbers in direct way, first it has to be converted into binary numbers.

Hexadecimal Number System:

Advantages :

- They are compact and use less memory.
- Their small size makes inpout-output handling easier.
- They are also useful to represent computer memory addresses.

Disadvantages :

- It can be difficult to perform complex mathematical operations.
- It is also difficult to read and write compared to decimal numbers.

4. Computers perform all of their operations using the **binary,** or base 2, **number** system. All program code and date are stored and manipulated in **binary number** is known as a **bit** (for binary digit) and can have only one of two values, **0** or **1.** Bits are commonly stored and manipulated in groups of 8 (known as a byte), 1G (usually known as a halfword), 32 (a word), or 64 bits (a double word). Sometimes other groupings used.

C. 1. F 2. F
3. F 4. T
5. T

D. 1. A binary number system has only two digits that are 0 and 1. The base of the binary number system is 2 because it has only two digits. In any binary number, the rightmost digit is called the least significant bit (LSB) and leftmost digit is called the most significant bit (MSB).

E. • Do your self

CHAPTER-2
ADVANCE MS WORD

A. 1. (a) 2. (b)
3. (c) 4. (b)
5. (b)

B. 1. multimedia
2. chart
3. normal
4. vertical
5. Split
6. Surface

C. 1. T 2. F
3. T 4. T
5. T 6. T

D. 1. A chart is a graphical or pictorial representation of data. Charts allow users to illustrate numerical data such as comparisons etc.. to better understand and also predict current and future data.

2. A style is a predefined combination of font style, color, and size that can be applied to any text in your document. Applying a style gives text element a specific formatting definition that can be consistently applied and easily updated. New documents automatically use the Normal style.

3. Step involved in inserting a chart into an MS word document are:

1. Click Insert > Chart.
2. Click the chart type.
3. Select the desired chart, then click ok.
4. In the spreadsheet that appears, replace the default data with own information.
5. Enter **source data** into the spreadsheet.
6. When finished, close the spreadsheet.
7. The chart will be completed.
8. If want, use the Layout Options button to arrange the chart and text in document.

The use of different type of charts are:

Column Charts:

A column chart is represented in vertical columns means vertical bars are used to represent date. The column height of each category is proportical to the values plotted.

Line Chart:

It is a chart that shows a line joining several points or a line that shows the relation between the points. It is commonly drawn to show information that changes over time.

Pie Chart:

Pie chart is a circular representation of data. It is called a pie chart because the sectors of the circles are just slices of a pie. The area within each sector (slice) represents the size of the data.

Bar Chart

Bar charts are similar to column charts and both display data in rectangular bars. But a bar chart plots the variable value horizontally, and the fixed dimension vertically.

Area Chart

Area charts are just like line charts, except the areas under the lines are filled in.

Surface Chart

Surface chart is actually a 3D chart that helps to represent the data into a 3D landscape. These charts are best to use with a large dataset. This chart allows to displaying a variety off data at the same time.

4. A table style holds a set of table, row, cell, paragraph and text formatting that can be applied to tables. Using table styles instead of directly formatting a table saves time in modifying the look of a table and switching to a different table style.

5. To add data to a chart in MS word :

(i) Click Insert > Chart

(ii) Click the chart type and then double click the chart you want.

(iii) In the spreadsheet that appears.

replace the default data with your own information.

(iv) When you're finished, close the spreadsheet.

E. 1. Do your self
2. Do your self
3. Do your self
4. Do your self

CHAPTER-3
ADVANCE POWER POINT

A. 1. (a) 2. (b)
3. (b) 4. (a)
5. (c)

B. 1. theme
2. taskbar
3. shape
4. Mouse
5. ESC

C. 1. T 2. F
3. T 4. T
5. T

D. 1. **Steps to add an audio to a presentation**
1. Click on Insert tab and look for media group.
2. Click on audio option and choose Audio on My PC option from the list that appears.
3. Insert Audio dialog box appears.
4. Choose the required audio file and click the insert button.
5. Selected audio will be added to the side.

Steps to add a video to a presentation
1. Click on Insert tab and look for media group.
2. Click on video option and choose video on My PC option from the list that appears.
3. Insert video dialog box appears.
4. Choose the required video file and click the insert button.
5. Selected video will be added to the slide.

2. Presenter view gives access to a special set of controls on screen that the audience won't see, allowing presenter to easily reference slide notes, preview the upcoming slide, and much more.
3. A theme is a predefined combination of fonts, colors and effects. Different themes also use different slide layouts. The defaults theme is MS office theme. It help in creating presentation by giving entire presentation a consistent professional look.

4. To access slide show setup options:

1. Select the Slide Show tab, then click the Set Up Slide Show command.
2. The Set Up show dialog box will appear. Form here, we can select the desired options for our presentation.
Click the buttons in the setup show dialog box below to learn about various options for setting up and playing a slide show.
To advance slides automatically, we'll need to customize the slide timing on the Transitions tab.

5. Slide Sorter view display all the slide in presentation in horizontally sequence or in thumbnail form. This make it useful in organising and arranging slides, just by dragging and dropping them wherever we want.

E. 1. Do your self

CHAPTER-4
MORE ON MS EXCEL

A. 1. (b) 2. (b)
3. (c)

B. 1. Three
2. Save
3. cell
4. Text
5. Delete

C. 1. T 2. T
3. F 4. F
5. F

D. Steps are as follows:

1. Click the file tab and select Save As option.
2. Select a location where you would like to save the sheet, Enter file name, which you want to give to your sheet and select a Save as type, by default it is. xlsx format.
3. Click on Save button and sheet will be saved.
   Saving work regularly is important as in case the computer frezes, crashes or restarts, then unsaved work will be lost.

2. Click the File tab > New > Blank Workbook icon
A new blank workbook will appear.

3. You can edit the contents of a cell directly in the cell you can also edit the contents of a cell by typing in the formula bar.
When you edit the contents of a cell, Excel is operating in edit mode. Some excel features work differently or are unavailable in edit mode.
When Excel is in edit mode the word edit appears in the lower - left corner of the excel program window.

4. **Cut** : Cutting in Excel, cut or remove a file from one folder and pasting it to another. **Copy :** Copying in Excel simply copies the data or formula from one cell to another, leaving the original data in the original cell.

To use Copy and Paste:

1. Select the cell as we have selected B9:
2. Click the Copy command on the Home tab, or press ctrl+C on keyboard.
3. Select the cell where you want to paste the copied data. We have selected D8 to D13.
4. Click the Paste command on the Home tab, or press Ctrl+V on keyboard.
5. The content will be pasted into the selected cells.

To use Cut and Paste:

1. Select the cell as we have selected D8:D13
2. Right-click the mouse and choose the Cut command or, you can use the command on the Home tab, or press Ctrl+X on Keyboard.
3. Select the cells where you want to paste the content. We have pasted content to F8: F13 and the cut content will be removed from D8:D13.

5. To open a workbook in excel :

1. Click the File tab and choose Open.
2. The Open dialog box appears.
3. Browse the directory and find the file you need to open.
4. Click the file you want to open and then click the Open button, or double - click the file's icon.

E. 1. Do your self

CHAPTER-5 PROGRAMMING IN PYTHON

A. 1. (c) 2. (a)
3. (c) 4. (b)
5. (b)

B. 1. reserved
2. variable
3. three
4. Float
5. string

C. 1. F 2. T
3. T 4. F
5. T

D. 1. A variable is a container for a value. It can be assigned a name, you can use it to refer to it later in the program.

2. The python type ( ) function print what type of data structures are used to store the data elements in a program.

3. **Global variable:-** Global variable in python are those which are not defined inside any function and have a global scope. This variable are accessible throughout the program and inside every function.

Local Variables: Local variables in python are those which are initialized inside a function and belong only to that particular function. It cannot be accessed anywhere outside the function.

4. **Various naming rules for Python Variables are:**

- A variable name must start with a letter or the underscore character.
- A variable name cannot start with a number.
- A variable name can only contain alpah-numeric characters and underscores (A-z, 0-9, and –).
- Variable names are case-sensitive (age, Age and AGE are three different variables).
- A variable name cannot be any of the Python keywords.

5. We can display a character from a string using its index in the string. Remember, indexing starts with 0.

```
>>> doctor='appointment'
>>> doctor [0]
Output
'a'
```

We can also display a substring from a string using the slicing operator [].

```
>>> doctor [2:7]
Output
'point'
```

This prints the characters from 2 to 6.

E. 1. Do your self

CHAPTER-6
MORE ON PYTHON

EXERCISE

A. 1. (b) 2. (c)
3. (a) 4. (a)
5. (c)

B. 1. keyboard
2. string
3. \n
4. conditional
5. Print ( )

C. 1. T 2. F
3. T 4. T
5. F

D. 1. **For Loop:** For loop execute a block of code, a fixed number of times. You can iterate over a range, string, sequence etc.

2. **The types of loops in python are:**

- For Loop
- While loop

3. **Python if...elif...else Statement**

A user can choose from a variety of alternatives here. In this variant of 'if statement', there are many else if conditions declared. If the condition does not satisfy then the next condition is executed. But if this condition also does not satisfy then the next condition is executed. Let us look at the syntax and the flowchart of if... elif... else statement.

4. **Python Functions**

A Python Function is a block of code which only runs when it is called and performs a specific task.

We can pass data, known as parameters, into a function. A function can return value (data) as a result.

For Example:

```
def fun( ):
    print ('Hello')
```

Here def is keyword used to create a function. fun( ) is the name of function.

Print('Hello') is the body of function.

5. We return a value from the function using the return statement.

Example: Finding cube of a number using return statement.

```
1. Cube of a number 27
2. det Find cube(run)
3. Result = run = run = run
4. Return result
5.
6. = calling function
7. cube = Find- cube (3)
```

8.

9. Print ('cube of number, code)

In the above example, we have created a function named find–cube(). The function accepts a number and returns the cube of the number.

E. 1. Do your self

CHAPTER-7
INTRODUCTION TO HTML

EXERCISE

A. 1. (b) 2. (b)
3. (a) 4. (c)
5. (b)

B. 1. text
2. Server
3. Web browser
4. document
5. Web pages

C. 1. T 2. T
3. T 4. F
5. T

D. 1. HTML is Hypertext Markup Language. It is used to create web pages.

2. (1) HTML documents are simple text files.

(2) Compiling is not required in HTML.

3. **Step 1 :** Open Notepad.

Type the HTML code.

Step 2 : Click on the File menu to save. Save as dialogue box will appear.

Step 3 : Make the choice of the folder, where file is to be saved and type a file name followed by extension. htm or .html.

Step 4 : Click on Save button.

4. To create, use text editor.

To view, use web browser.

5. Web browser is used to view and display the HTML documents.

E. 1. Do your self

CHAPTER-8
INTRODUCTION TO FLASH

EXERCISE

A. 1. (b) 2. (b)
3. (d) 4. (d)

B. 1. width 2. name
3. commands 4. Pencil tool
5. two

C. 1. T 2. F
3. T 4. F
5. T

D. 1. (1) Title Bar : It shows name of the currently open file.
(2) Stage : It shows work done.
(3) Menu Bar : It carries all commands, in flash.
(4) Color Palette : It has a variety of colours.
(5) Work Area : It is the place on both sides of the stage.
(6) Timeline Panel : It controls the organised file content overtime in layer and frames.
(7) Tools Panel : It contain different tools to choose from.
(8) Property Inspector: It can organise and modify the properties of current selection.

2. Brush tool enables the user to draw thick strokes of line.

3. Color Palette has a variety of colors to work with.

4. Four ways in which free transform tool works are :
1. Distort
2. Scale
3. Rotate and skew
4. Envelop

5. Text Tool enables the user to add text working.

Steps to add text :

Step 1 : Click on Text tool.

Step 2 : Adjust the text color, font and font size.

Step 3 : Types the text.

E. 1. Do your self

LESSON - 9
MORE ON INTERNET

EXERCISE

A. 1. (b) 2. (d)
3. (b) 4. (a)
5. (c)

B. 1. Cyber security
2. browser
3. phrases
4. teacher, students and parents
5. Country
6. country

C. 1. (T) 2.(T)
3. (T) 4. (F)
5. (F) 6. (T)
7. (T) 8. (T)
9.(F) 10.(T)

D. 1. A search engine is like a big library where we can look for information on almost any topic. It is a website that helps us to find other websites, articles, pictures , and videos.

When we want to find something online, we type a word or phrase related to our topic into the search bar of a search engine, like Google or Bing.

The search engine then looks through its vast collection of information, which is called an index, to find web pages that match our search words.

2. Three popular web search engines are:

Google, Bing, Yahoo!

Google : It allows Android users to search anything on their screen by simply circling or highlighting it.

Bing : It affers higher-quality images with more detailed information.

Yahoo! : It allows to see what we've searched for in the past.

3. DIKSHA stands for Digital Infrastructure for Knowledge Sharing. The Diksha portal is an online platform developed by the Indian government to provide digital educational resources and tools to teachers, students, and parents across the country. The Diksha portal is like a magical treasure trove of educational resources that students and teachers can explore to make learning and teaching more enjoyable and effective. It's wonderful tool to help everyone in their educational journey!

4. Swayam, stands for Study Webs of Active Learning for Young Aspiring Minds, is an online platform introduced by the Government of India to offer free online courses to learners across the country. Swayam is like a digital treasure trove of educational opportunities that students and learners of all ages can explore to discover new interests and enhance their understanding of various subjects. It's a fantastic tool to support lifelong learning and personal growth!

5. " PM e- Vidya" is an initiative launched by the Government of India to provide digital education and online learning resources to students across the country. PM e- Vidya is like a digital classroom that brings education to our fingertips. It's a wonderful tool to help students learn, explore, and grow, even when they can't be physically present in a traditional classroom setting.

6. Cybersecurity is like a shield that protects our devices, such as computers, tablets, and smartphones, from bad things on the internet.

It is important as it helps to keep our online information safe from hackers and bad people who might want to steal it or do harm.

E. Do yourself

LESSON - 10
CLASSIFICATION OF AI

A. 1. (a) 2.(b)
3. (c) 4.(a)
5. (a)

B. 1. Super AI
2.personalized
3.real- time
4.security
5.learning
6.accurately and quickly

C. 1.(T) 2.(F)
3.(T) 4.(T)
5.(F)

D. 1. Narrow AI, also know as weak AI,refers to AI systems that sre designed and trained for a specific task or set of tasks. These systems excel in performing a narrow range of tasks within a well-defined domain.

An example of Narrow AI that we use in our daily life include virtual personal assistants like Siri or Alexa.

2. General AI, also know as Strong AI or Artificial General Intelligence (AGI), refers to AI systems that have the ability to understand learn, and apply knowledge across a wide range of tasks and domains.

These systems would exhibit human-like intelligence and cognitive abilities, including reasoning, problem - solving, creativity, and emotional understanding.

Unlike Narrow AI, General AI would be capable of learning new tasks and adapting to new environments without the need for reprogramming or significant human intervention.

3. Superintelligence refers to a hypothetical level of intelligence that surpasses the cognitive capabilities of humans across all domains and activities.

Unlike Narrow AI and General AI, Super AI surpasses human intelligence, performing any task better than humans.

4. Virtual personal assistants like Siri, Alexa and Google Assistant use AI to understand natural language commands and perform tasks such as setting reminders, sending messages, and answering questions. They make daily life more convenient and efficient.

E. Do your self

Computer-8

CHAPTER-1
NUMBER SYSTEM

A. 1. (b) 2. (a)
3. (a) 4. (b)
5. (c)

B. 1. Octal 2. 10
3. 0 4. 16
5. Bits

C. 1. F 2. T
3. F 4. F
5. T

D. 1. Divide the number by 2 till we get 1 as the quotient. Then starting from the last remainder write all the from left to right get the binary equivalent number.

2. Number system is a system of reprocessing number in various ways. It denotes group of character which denote various numerical quantities. There are various kinds of number system e.g., Decimal, Hexadecimal, Octal and Binary number systems.

3.
2	69	Remainder 1
2	34	Remainder 0
2	17	Remainder 1
2	8	Remainder 0
2	4	Remainder 0
2	2	Remainder 0
	01	Remainder 1

$(69)_{10} = (1000101)_2$

4. 10101
   1101
   100010

5. $(1111)_2$ and $(1001)_2$

```
    1111
  ×1001
    1111
   0000×
  0000××
 1111×××
 10000111
```

E. • Do your self

CHAPTER-2
MS EXCEL: FUNCTIONS AND FORMULAS

A. 1. (a) 2. (a)
3. (a) 4. (a) 5. (d)

B. 1. Windows 2. Worksheets
3. Clear contents 4. Insert > Comments
5. Auto sum.

C. 1. T 2. F
3. T 4. T 5. T

D. 1. Five formatting tools available on Home tab in Excel are :
a. Font name b. Font size c. Alignment
d. Wrap text e. Merge & Center

2. A formula is an equation that performs a calculation. Like a calculator, Excel can execute formulas for addition, subtraction, multiplication and division.

3. Type an equal sign (=) and then type a function for example = SUM for getting the total sales. Type an opening parenthesis (select the range of cells, and then type a closing parenthesis).

4. The steps to apply a colourful border to a cell in a worksheet is
   a. Click on Border tab.
   b. Click on the drop-down arrow and select the desired colour.
   c. Click on ok button.

5. The Alignment tab is where you place text and numbers in cells, modify their orientation and specify the text control.

6. To perfrom basic mathematical operations, arithmetic operators are used. For example, + (Plus sign) for addition, – (Minus sign) for subtraction, * (asterisk sign) for multiplication, / (forward slash) for division, % (Percentage sign) for percentage and (^) carat for exponents.

7. Formatting text or number can make them appear more visible especially when you have a large worksheet. Changing default formats includes things like changing the font colour, style, size, text alignment in a cell, or apply formatting effects.

E. 1. An equal sign is must to be at the start of each formula.

2. Rahul used plus (+) sign to perfrom addition on the computer.

3. Rahul used multiplication (*) sign to perform multiplication on the computer.

CHAPTER-3
MS EXCEL: USING CHARTS TO PRESENT DATA

A. 1. (b) 2. (b)
3. (d) 4. (a) 5. (b)

B. 1. F11 2. Items
3. Tools 4. Interconnected

C. 1. T 2. F
3. T 4. F 5. T

D. 1. A chart is a tool that can use in Excel to represent data pictorially. Charts allow audience to see the meaning behind the numbers, and they make representing comparisons and trends much easier.

2. Various types of charts that can be created in MS Excel are :

Column Chart

The information is shown in vertical columns in this chart. It typically displays categories along the horizontal axis and values along the vertical axis. It allows you to compare two or more items in a single category of data.

Line Chart

A line graph (line chart or run chart), in this chart, data is plotted in the from of line with connecting dots. It displays categories along the horizontal axis and values along the vertical axis.

Pie Chart

In this chart, data is displayed in the form of circles that shows this size of items in one data series, proportional to the sum of the items.

Bar Chart

In this chart, data is displayed in the form of horizontal bars. It displays categories along the vertical axis and values along the horizontal axis.

Area Chart

An area chart is a primary Excel chart type, with data series plotted using lines with a filled area below. Area Charts are a good way to show magnitude of change over time.

Funnel Chart

A funnel chart is a visual representation of progress across certain stages. This chart should have at least 3 stages to show.

3. Steps to move a chart on the worksheet:

a. The mouse pointer transforms into a moving handle when you point it anywhere on the chart.

b. Click and drag the chart to new location.

4. To change the chart style in a worksheet

a. Select the chart on the worksheet. The chart tools (having Design and Format tabs) appear on Ribbon.

b. Click on Design tab.

c. Select the desired style from the menu by clicking the chart style drop-down button.

5. To move a chart on the worksheet:

a. The mouse pointer transforms into a moving handle when you point it anywhere on the chart.

b. Click and drag the chart to new location.

- To resize a chart on the worksheet:
  Put mouse cursor on the corner of the chart and drag it diagonally.
- To print out the chart:
  Select the chart and press Ctrl+P.

6. The Steps to insert a picture in the worksheet are:

a. Select any cell.

b. Click the Pictures tool in the Illustrations group on the Insert Tab. The dialog window for inserting a picture appears.

c. Locate the required image and select it.

d. click on Insert button.

The selected image is inserted in the worksheet.

E. 1. By using Column Chart
2. By using Pie Chart
3. By using Bar chart

CHAPTER-4
CLOUD COMPUTING

A. 1. (a) 2. (d)
3. (c) 4. (a) 5. (c)

B. 1. Private 2. IaaS, PaaS, SaaS
3. Paas
4. Google online storage
5. Trash

C. 1. F 2. T
3. F 4. F 5. T

D. 1. Cloud computing is the delivery of computing services such as servers, storage, databases, networking, software, Analytics, intelligence, and more, over the Cloud (Internet).

2. If we choose cloud computing, a cloud vendor is responsible for the hardware purchase and maintenance. They also provide a wide variety of software and platform as a service. We can take any required services on rent. The cloud computing services will be charged based on usage.

3. This service provides an on-demand environment for developing, testing, delivering, and managing software applications. The developer is responsible for the application, and the PaaS vendor provides the ability to deploy and run it. Using Paas, the flexibility gets reduce, but the management of the environment is taken care of by the cloud vendors.

4. Google Drive is cloud storage developed by Google. We can store our files online in Google Drive and can access them from anywhere in the whole world. Drive gives 15 GB of free Google online storage. in which we can keep files, folder, backups and everything that is important.

E. 1. Opening Google Drive
To start Google Drives, open Google page in the web browser.
1. In the Google page, click on Signin. Google account page will appear.
You login ID and password are same as that of your Gmail account.
2. Type your login ID and the password. Password will appear in the form of black dots.
3. Click on Next button. Google page appears again with your login details.
4. Click on Google Apps button. A list of all Google Apps Appears.
5. Click on Google Drive. Google Drive window appears.

2. To Rename the document
1. Click on File menu.
2. Click on Raname.
3. Type the name, you desire in the box.
4. Press the enter key.
The new name will appear in Docs App.

CHAPTER-5
COMPUTER VIRUS AND ITS DETECTION

A. 1. (b) 2. (c)
3. (c) 4. (c) 5. (a)

B. 1. Bombs 2. AVG
3. data 4. speed
5. Pen drive

C. 1. F 2. T
3. F 4. F 5. T

D. 1. Computer virus can harm by modify or corrupt files, delete data, steal passwords etc.

Some of the routes from which a virus can attack a computer are:
(i) E-mail.
(ii) Infected pen drive & CDs.
(iii) Downloading infected files.
(iv) Starting an infected application.

2. Types of computer viruses and their effect:
(1) Bombs: damage the computer.
(2) Boot Sector Virus: damage the boot sector part of floppy disk.
(3) Trojans: destroy data.
(4) Worms: spread everywhere and affect the speed.
3. Programs which are used to detect and remove viruses.
4. Norton, AVG, Avast, Kaspersky.
5. Keyboard & mouse.

E. (1) Do your self

CHAPTER-6
COMPUTER ETHICS, CRIMEAND SECURITY

A. 1. (a) 2. (c)
3. (c) 4. (b) 5. (a)

B. 1. illegal 2. Software
3. copyright 4. warranty
5. Hardware

C. 1. F 2. T
3. F 4. F 5. T

D. 1. Software piracy or copyright violation refers to the illegal copying and distribution of commercial copyright without paying for it.
2. Hacker is person, who breaks into computer system to get invalid exposure to confidential data and information.
3. Online auction piracy refers to sale of a software that is not authorized for resale.
4. Pre-installed software piracy refers to invalid installation of a computer software on multiple systems by the manufacturer.
5. Cracker is person, who breaks into computer system to use passwords, files or programs illegally.

E. Do yourself

CHAPTER-7
BROWSING INTERNET

A. 1. (b) 2. (b)
3. (b) 4. (a) 5. (a)

B. 1. Contacts 2. acronyms
3. uppercase 4. E-mail
5. Copyright

C. 1. T 2. F
3. F 4. T 5. T

D. 1. Intention to hurt or embarrass other persons by sending or posting wrong text or images through the internet, is known as cyber bullying.
2. A combination of keystrokes that form a sort of picture related to an emotion is called emoticon.
3. Short forms of words used to communicate on Internet are known as acronyms.
4. Internet provides an easy way to get information from all over the world. It provides many facilities like sending and receiving messages, greeting cards, downloading music, songs or pictures and many more.
5. E-mail address is used to send or receive messages.

E. • Do your self

CHAPTER-8
ARTIFICIAL INTELLIGENCE: INTRODUCTION

A. 1. (d) 2. (d)
3. (d) 4. (b) 5. (d)

B. 1. Interpreting
2. artificial intelligence
3. fourth industrial revolution
4. John Mc Carthy

C. 1. T 2. T
3. F 4. T 5. T

D. 1. (a) Human Intelligence:
Human intelligence is a mental attribute that includes the capacity to learn from experience, adapt to new conditions, comprehend and handle abstract concepts, and manipulate one's surroundings using knowledge.
(b) Artificial Intelligence
Artificial intelligence refers to the simulation of human intelligence in machines that are programmed to third like humans and mimic their actions

2. The phrase "Artificial Intelligence" was coined by John McCarthy (1927-2011), an American Computer scientist and cognitive scientist. He was a pioneer in the field of artificial intelligence. Along With Alan Turing. Marvin Minsky, Allen Newell, and Herbert Simon, John McCarthy is considered one of the "founding fathers" of artificial intelligence.

3. Artificial intelligence (AI) refers to a machine's ability to do cognitive functions such as thinking, perceiving, learning. Problem-solving, and making decisions. Originally envisioned as a device capable of imitating human intelligence. With amazing advancements in data gathering, processing, and computation power, intelligent systems may now be deployed to take over a range of jobs, enable communication, and boost productivity.

4. Al isn't a well-defined technology, and there isn't a single description that everyone agrees on. It's more of a catch-all word for data analysis and pattern detection tools. Artificial Intelligence (AI) is a technology that has been around since the 1950s. Some markets, industries, and businesses are further advanced than others, because AI is still in its early stages of development. There are many opportunities for additional development and enhancement in terms of both the range of possible applications and the quality of most existing implementations.

5. Artificial intelligence (AI) is the future of all complicated decision-making and is the foundation for all computer learning. AI is the attempt to make computers think and act like humans.

E. 1. John McCarthy

2. Artificial Intelligence.

3. AI refers to the simulation of human Intelligence in machines that are programmed to think like humans and mimic their actions.

CHAPTER-9

Future of AI and Rise of New Technology

A. 1. (b) 2. (a)
3. (a) 4. (a) 5. (a)

B. 1. virtual mannequin
2. Journalists 3. AR / VR
4. virtual reality
5. Augmented reality

C. 1. F 2. T
3. T 4. T 5. T

D. 1. The term Artificial Intelligence was initially coined by John McCarthy in 1955, which meant a machine that can solve problems that humans perform-using natural intelligence.

2. Augmented reality (AR) is an enhanced version of the real physical world that is achieved through the use of digital visual elements, sound, or other sensory stimuli delivered via technology. It is the integration of digital information with the user's environment in real time.

3. Three examples of AR technology are :
(a) Pokemon Go
(b) Snapchat
(c) Google Maps

4. Difference between Augmented Reality and Virtual Reality:
- AR uses a real-world setting while VR is completely virtual.
- AR users can control their presence in the real world; VR users are controlled by the system.
- AR can be accessed with a smartphone while VR requires a headset device.
- AR enhances both the virtual and real world while VR only enhances a fictional reality.
- Google Glass is an AR device while Oculus Rift is a VR system.

5. AI applications in healthcare can literally change patients' lives, improving diagnostics and treatment and helping patients and the healthcare provider make informed medical decisions quickly. Diseases are diagnosed more quickly and accurately in the relatively new field of healthcare, drug discovery is accelerated and streamlined, virtual nursing assistants monitor patients, and big data analysis aids in the creation of a more personalised patient experience.

6. The uses of AI in smart homes are :
(1) Everything at your fingertips.
(2) Execute customised schedules.
(3) Talk to or make your home talk.
(4) Intelligent protection
(5) Easy access to the mobile encyclopedia.

E. Application Based Question

1. VR stands for Virtual Reality, which is something that does not exist physically but can be visualised and experiences.

2. Virtual reality enables the creation of real- life simulations in order to provide users with an immersive experience that makes them feel as if they are actually interacting with the digital environment around them.

3. Car racing games are an example of immersive virtual reality that gives the user the sensation of speed and driving skills.

CHAPTER-10
AI : Challenges and Applications

A. 1. (a) 2. (d)
3. (a) 4. (a) 5. (a)

B. 1. AI
2. Reinforcement
3. Von Neumann
4. The Turing Test
5. Speech synthesis

C. 1. T 2. T
3. T 4. F 5. F

D.1. Artificial Intelligence is the ability of a digital computer or computer-controlled robot that can perform tasks generally associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes.

2. (a) Eliminate Dull and Boring Tasks: An artificially intelligent system will perform and continue to perform the task that is assigned to it, no matter how many times it must do so.

(b) Imitates Human Cognition: It is referred to as an artificially intelligent system because it imitates or mimics the way the human mind thinks and solve problems.

3. Chatbots are software that allows a conversation with the user to solve any problems they are having, either through auditory or texting methods. These programmes simulate human behaviour while conversing with a human via an application. Many

businesses, including Swiggy and Nykaa, have begun to use chatbots for customer service.

4. There are four types of AI-based systems :

(1) Reactive machines: These are the most primitive AI systems, with extremely limited capabilities. They mimic the human mind's ability to respond to various types of stimuli, Memory-based functionality is not available in these machines.

(2) Limited Memory: Limited memory machines are machines that, in addition to having the capabilities of purely reactive machines, can make decisions based on historical data. Almost all existing applications that we are aware of fall into this category of AI.

(3) Theory of Mind: While the previous two types of AI have been and continue to be abundant, the next two types of AI exist only as a concept or as a work in progress for the time being. Mental theory AI is the next level of artificial intelligence systems that researchers are currently developing. A theory of mind AI will be able to better understand the entities with which it interacts by determining their needs, emotions, beliefs, and thought processes.

(4) Self Awareness: This is the final stage of AI development, which exists only in theory at the moment. Self-aware AI is an AI that has evolved to be so similar to the human brain that it has developed self-awareness. Developing this type of AI, which is decades, if not centuries, away, is and will always be the ultimate goal of all AI research.

5. Turing Test: The Turing test, originally called the imitation game was founded by Alan Turing an English computer scientist, cryptanalyst, mathematician and theoretical biologist in 1950, is a test of a machine's ability to exhibit intelligent behaviour equivalent to, or indistinguishable from that of a human. It is a method of inquiry in artificial intelligence (AI) for determining whether or not a computer is capable of thinking like a human being. The Turing Test judges the conversational skill of a bot.

6. Do Yourself

E. 1. The software engine that drives the fourth Industrial Revolution is Artificial Intelligence (AI).

2. It holds the promise of resolving some of society's most pressing issues.

3. Artificial Intelligence face challenges such as incomprehensible "black box" algorithms, unethical data and potential job displacement.

4. Its influence is already being felt in homes, business and political processes.