

## CONTENTS

TECH TOUCH – 6 .....	01-18
TECH TOUCH – 7 .....	19-35
TECH TOUCH – 8 .....	36-50

## TECH TOUCH 6

CHAPTER

1

### Categories of Computers and Computer Languages

#### Exercise

**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

1. Speedometer      2. Supercomputer      3. micro  
4. Source code      5. mnemonics

**D. Match the following.**

1. Laptops → (a) Mnemonics  
2. Deep Blue → (b) Artificial Intelligence  
3. Assembly language → (c) Digital Computer  
4. Natural language → (d) Compiler  
5. Translator → (e) Super Computer

**E. Answers the following questions.**

1.	<b>Mainframe Computer</b> Computers utilized by large organizations to manage bulk data are designated as Mainframe computers. Mainframe computers are huge in size and can occupy a whole room or even an entire floor. A mainframe computer allows many users to work on it at the same time.	<b>Microcomputer</b> Microcomputers are small computers that have a microprocessor as their CPU (Central Processing Unit). These computers are also known as personal computers (PCs) as they are meant to be used by a single person at a time.
2.	<b>Compiler</b> It is a translator program to convert a high level language program into machine language. It translates the whole program at once, i.e., it generates the object code for the program along with a list of errors, if any. The execution is very fast.	<b>Interpreter</b> It is a translator program to convert a high level language program into machine language. It translates line by line, i.e., it converts one line, executes the instruction and then repeats the procedure for the remaining instructions. Errors, if any, are to be immediately removed.

3.	Assembly Language	Machine Language
	Assembly language is also known as second generation language (2GL). It is the language in which program codes are written in the form of alphanumeric symbols called Mnemonics instead of binary digits 0 and 1. Programs written in assembly level languages are called assembly codes.	It is the only language that a computer understands. It is expressed in binary form, i.e., '0' and '1' where '0' means Off and '1' means ON state. It is also known as First Generation Language. It is the language that is directly accepted and executed by the CPU.

4. (a) A 4GL is fast and requires less time and effort on the part of the programmer.  
(b) 4GLs are easy to use and programmers with very little programming background can develop programs.

### Competency Based Question

Third Generation Languages : BASIC, PASCAL, C, JAVA, C++  
Fourth Generation Languages : SQL, Perl, Python  
Fifth Generation Languages : PROLOG and Mercury



A.

Q	B	A	S	I	C	F	B
E	A	L	G	R	G	P	A
D	F	O	R	T	R	A	N
A	E	G	H	I	T	O	S
C	T	O	C	Q	R	L	J
O	W	C	B	V	U	O	X
J	A	V	A	C	F	G	Z
S	Q	L	B	K	Y	P	A

B. Do yourself.

## CHAPTER 2

## Advanced Features of MS Word

### Exercise

A. Tick (✓) the correct option.

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







**B. Write 'T' for True and 'F' for False statements.**

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



**C. Fill in the blanks.**

1. Insert    2. AutoFit Window                      3. Main  
4. Mailing    5. Main document

**D. Match the following.**

1.  → (a) Deleting a row or a column  
2.  → (b) Inserting a table  
3.  → (c) Inserting a row or a column above  
4.  → (d) Inserting a row or a column left

**E. Answers the following questions.**

1. See topic 'Creating a Table' on book page no. 14, 15.  
2. **Table Move Handle**  at the upper left corner of table is used to move a table and Table.  
**Resize Handle**  at the bottom right corner of the table is used to resize a table.  
3. **Step 1** : Select the row/column you want to delete.  
**Step 2** : Click on the **Layout** Tab, under the **Table Tools** tab.  
**Step 3** : Select the **Delete** option in the **Rows & Columns** group. A list of options appears.  
**Step 4** : Choose the **Delete Rows** or **Delete Columns** option in the drop down menu.

OR

- Right click on the selected row/column that you want to delete.  
Select the **Delete Row/Delete Columns** option from the shortcut menu.
4. In MS Word, the **Mail merge** option is an important feature. Many time we need to send a standard letter to many people at the same time. For this we type the body of the letter in MS Word and mail merge makes multiple copies of the letter with names and addresses of persons available in the records.  
For example, a form letter might be personalized to address each recipient by name.
5. The Mail Merge process requires the following.  
**Main Document:** The document that contains letter or text which is to be sent is called the Main Document.

**Data Source:** The file where all the addresses of the recipients are stored is called the Data Source.

**Merge Document:** When you merge the **Main Document** with the **Data Source**, final document called the **Merged Document** will be produced.

**Competency Based Questions**

1. He should use **Split Cells** button in the **Merge** group.
2. Data Source.



A.



B. Do yourself.

**CHAPTER 3**

**Giving Life to The Presentation**

**Exercise**

- A. Tick (✓) the correct option.**
1. (c)
  2. (b)
  3. (c)
  4. (a)
  5. (b)
- B. Write 'T' for True and 'F' for False statements.**
1. T
  2. F
  3. T
  4. F
  5. T
- C. Fill in the blanks.**
1. Screen Recording
  2. Media
  3. This Device
  4. Shapes, Insert
  5. Format, Playback
- D. Answers the following questions.**
1. See topic 'Inserting An Audio File' on book page no. 26,27.

2. See 'Record Audio' of topic 'Inserting An Audio File' on book page no. 26, 27.
3. Action buttons are built-in button shapes that function much like hyperlink. We can link them to a file, slide, web address or e-mail address and so on. When someone click or move the pointer over an action button, the specified action will occur.

Use an Action Button to do an action in your presentation, such as going to the next or a specific slide, running an app, or playing a video clip.

4. Screen Recording is used to record your computer screen and related audio, which you can then embed in your presentation or save as a separate file. To use this utility, you will need a sound card, microphone, and speakers.

### E. Guess who I am?

- |                 |           |                   |
|-----------------|-----------|-------------------|
| 1. Insert       | 2. Video  | 3. Action Buttons |
| 4. Record Audio | 5. Insert |                   |

### Competency Based Question

See topic 'Inserting Video' on page 28, 29.



A.

R	E	C	O	R	D		A	U	D	I	O
		S	M	A	R	T	A	R	T		
	T	R	A	N	S	I	T	I	O	N	
		P	L	A	Y	B	A	C	K		
	S	L	I	D	E		S	H	O	W	
		D	U	R	A	T	I	O	N		
S	L	I	D	E		S	O	R	T	E	R

B. Do yourself.

### Exercise

A. Tick (✓) the correct option.

- |        |        |        |        |        |
|--------|--------|--------|--------|--------|
| 1. (a) | 2. (c) | 3. (c) | 4. (c) | 5. (b) |
|--------|--------|--------|--------|--------|





## Competency Based Questions

- (a) Select the column(s) to the left of which you want to insert a new column.  
 (b) In the **Home** tab under **Cells** group, click the **Insert** button.  
 A drop-down menu appears.  
 (c) Select the **Insert Sheet Columns** option. A blank column will get inserted.
- Now, she can enter those marks.
- Use **AutoFill** or **Fill Handle** feature.



















A.

 Copy	 Wrap Text	 Merge & Center	 Align Left
 Cut	 Paste	 Clear All	 AutoSum

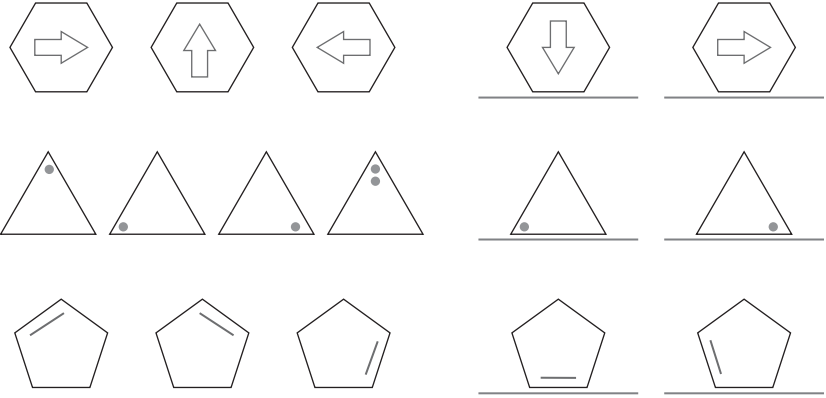
B. Do yourself.



A.

	① 	② 	③ 	2
	① 	② 	③ 	1
	① 	② 	③ 	1
	① 	② 	③ 	2

B.



CHAPTER  
**5**

**Formula and Functions in Excel**

**Exercise**

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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

C. Fill in the blanks.

1. Rational      2. &      3. Home  
4. #VALUE!      5. Arguments

D. Based on the given worksheet, write the result of the following operations.

1. 166      2. 74      3. 99  
4. 0.76      5. FALSE      6. True

E. Answers the following questions.

1. Excel provides you the formula copying facility to help you out. You need to write the formula only once and then you can drag it to other cells as you did with Auto Fill.

To copy a formula, follow the given steps :

**Step 1** : Select the cell that contains the formula, then position the mouse pointer over the lower- right corner of the cell until the black cross (+) appears.



**Step 2** : Drag the fill handle over the cell or cells to which you want to copy the formula, then release the mouse button.

2. See topic 'Using Cell Reference' on book page no 52.

### 3. Rules to Enter a Function

- All Excel functions must begin with '=' sign.
  - Function name must be a valid Excel name. For example, SUM, AVERAGE.
  - Function name must be followed by an opening and closing parenthesis.
  - Arguments are enclosed in the parenthesis. For example, =SUM (A1:A5).
  - Function names are not case-sensitive.
4. A Functions in MS Excel is a predefined formula that allows us to perform a particular kind of computations like adding and finding the sum of cell values, finding the average of cell values and so on.

Just like a formula, a function also begins with an equal to (=) sign, and has two main parts- the **Function name** and the **arguments**, that are included within a parenthesis ().

5. It occurs when any wrong operands or arguments are used within a formula or function. You can rectify this error by specifying the correct arguments.



### Competency Based Questions

1. Enter data in Excel worksheet and use function AVERAGE (range).
2. AVERAGE (range)
3. Do yourself.



- A. • SUM (range)  
• UPPER (text)  
• MAX (range)  
• PRODUCT (range)
- B. Do yourself.
- C. Do yourself.

### Exercise

**A. Tick (✓) the correct option.**

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






**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

1. algorithm                      2. Start                      3. terminal  
4. rectangle                      5. processing

**D. Match the following.**

1.  → (a) Decision Box  
2.  → (b) Flow Lines  
3.  → (c) Terminal box  
4.  → (d) Processing box  
5.  → (e) Input/Output box

**E. Answers the following questions.**


- Algorithm, Flowchart and Program are the three steps to solve a computer problem.
- The direction of flow of information in a flowchart is either from top to bottom or from left to right.

3. Algorithm	Flowchart
Before writing computer program, we need to write the steps to solve that problem in simple English language. This step-by-step procedure to solve any problem is called Algorithm. Thus a set of formal instructions that is used to perform a specific task or solve a logical or mathematical problem is called Algorithm.	A Flowchart is a graphical or visual representation of an algorithm. It is a procedure to solve a particular problem in a pictorial form by using some special geometrical symbols. These symbols are used to maintain the integrity and consistency of a program. Flowcharts are helpful in the logic of problems.

- See book page no. 64, 65.
- There are some guidelines for writing an algorithm.
  - Give statement numbers as step1, step2, etc.

- Always begin with Start and end with Stop.
- Write each instruction on a separate line.

### Competency Based Questions

1. She should write algorithm before drawing flowchart.
2. She should write this instruction in input box.
3.  Decision box.



A.

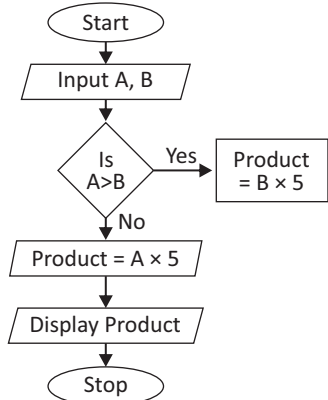
A	L	G	O	R	I	T	H	M
P	A	F	U	P	W	D	F	F
R	C	L	Q	C	X	T	U	L
O	B	O	S	T	A	R	T	O
G	D	W	R	E	J	Q	R	C
R	E	L	S	I	K	V	O	H
A	F	I	T	J	G	W	H	A
M	H	N	S	T	O	P	I	R
S	G	E	V	K	O	X	S	T
C	O	N	N	E	C	T	O	R

- B. • To accept two numbers and multiply the smaller number by 5 and print the result.

#### Algorithm

- Step 1 :** Start
- Step 2 :** Take two numbers A and B.
- Step 3 :** Is A > B.
- Step 4 :** If yes, Product = B × 5.
- Step 5 :** If no, product = A × 5.
- Step 6 :** Display the product.
- Step 7 :** Stop

#### Flowchart

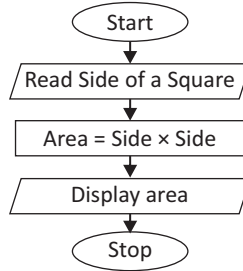


- To find the area of a square garden of side 6m.

### Algorithm

- Step 1** : Start  
**Step 2** : Input Side.  
**Step 3** :  $\text{area} = \text{Side} \times \text{Side}$   
**Step 4** : print area  
**Step 5** : Stop

### Flowchart

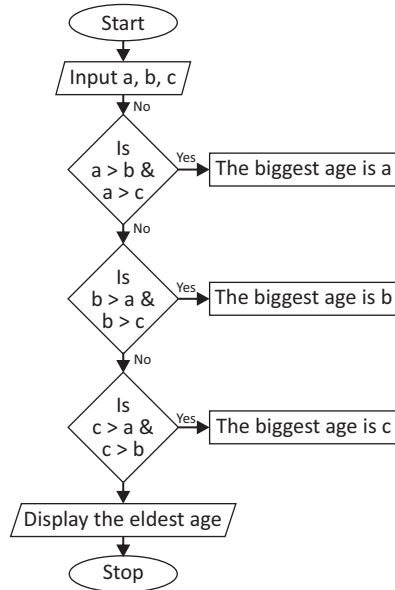


- To compare ages of three person and display who is eldest of the three.

### Algorithm

- Step 1** : Start  
**Step 2** : Take age a, b, c  
**Step 3** : Is  $a > b \ \& \ a > c$   
**Step 4** : If yes, the biggest age is a.  
**Step 5** : If no, is  $b > a \ \& \ b > c$ .  
**Step 6** : If yes, the biggest age is b.  
**Step 7** : If no, is  $c > a \ \& \ c > b$ .  
**Step 8** : If yes, the biggest age is c.  
**Step 9** : Display the eldest age.  
**Step 10**: Stop

### Flowchart

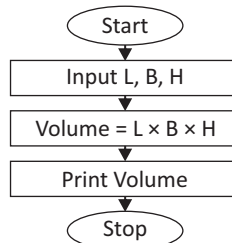


- To find the volume of a cuboid.

### Algorithm

- Step 1** : Start  
**Step 2** : Input Length, Breath and Height (L, B, H)  
**Step 3** :  $\text{Volume} = L \times B \times H$   
**Step 4** : Print Volume  
**Step 5** : Stop

### Flowchart

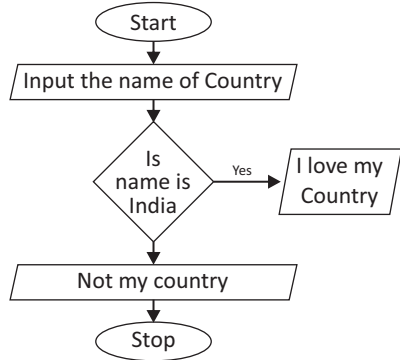


- Accept the name ..... "Not my country".

### Algorithm

- Step 1 :** Start
- Step 2 :** Input the name of country.
- Step 3 :** Is, name is India.
- Step 4 :** If yes, display "I love my country."
- Step 5 :** If no, display, "Not my country."
- Step 6 :** Stop

### Flowchart



C. Do yourself.

## CHAPTER 7

## Introduction to Python

### Exercise

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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

C. Fill in the blanks.

1. Guido van Rossum      2. Assignment      3. line-by-line  
4. string      5. varibale

D. Find the error in the following.

- Syntax Error : invalid syntax. Delete avg.
- Syntax Error : invalid syntax. Write correct code:  
print("the teacher said \ Do it \")
- Use print ( ) function to display the value of c.
- Invalid Syntax. Remove space between + and =.
- No error.

E. Answers the following questions.

- Python was created by Guido van Rossum, and was first released on February 1991. It is named after Monty Python's Flying Circus, a comedy television show.

- Interactive mode and script mode.
- Variables are memory reference points where we store values which can be accessed or changed later.

#### 4. The input() Function

Python has an input() function which lets you ask a user for some text input. You call this function to tell the program to stop and wait for the user to key in the data.

#### The print() Function

The print() function prints the specified message to the screen, or other standard output device. The message can be a string, or any other object, the object will be converted into a string before written to the screen.

- When you use int() function, the values are converted to integers and are then added as shown below.

```

IDLE Shell 3.10.8
File Edit Shell Debug Options Window Help
Python 3.10.8 (tags/v3.10.8:aaaf517, Oct 11 2022, AMD64) on win32
Type "help", "copyright", "credits" or "license()"
>>> a=int(input("Enter Ist value:"))
Enter Ist value:78
>>> b=int(input("Enter IInd value:"))
Enter IInd value:45
>>> print("The sum is:",a+b)
The sum is: 123
>>>

```

Sum of numbers

### Competency Based Questions

- You can assign multiple values to multiple variable by separating variables and values with commas.
- To convert a string to an integer in Python, you use the int() built-in function.



- A. (a) 2 5  
 (b) Enter kilogram  
 (c) Hello World  
 Hello World 15  
 55  
 (d) a = 20  
 b = 20

B. 1.

```

arithmetic.py - C:/Users/hp/Desktop/arithmetic...  -  □  ×
File Edit Format Run Options Window Help
print("Enter any two positive integer numbers:")
p, q = int(input()), int(input())
sum, sub, mul, mod, div = 0, 0, 0, 0, 0

sum = p + q
sub = p - q
mul = p * q
div = p / q
mod = p % q

print("\n")
print("SUM      ", p, "+", q, "=", sum)
print("DIFFERENCE", p, "-", q, "=", sub)
print("PRODUCT   ", p, "*", q, "=", mul)
print("QUOTIENT   ", p, "/", q, "=", div)
print("MODULUS    ", p, "%", q, "=", mod)
Ln:11 Col:0

```

2.

```

swap.py - C:/Users/hp/Desktop/swap.py (3.10.8)  -  □  ×
File Edit Format Run Options Window Help
a = int(input("please give first number a: "))
b = int(input("please give second number b: "))
tempvar=a
a=b
b=tempvar
print("After swapping")
print("value of a is : ", a):
print("value of b is : ", b):
Ln:8 Col:30

```

3.

```

average.py - C:/Users/hp/Desktop/average.py (3.10.8)  -  □  ×
File Edit Format Run Options Window Help
a = int (input(" Please Enter the First Number: "))
b = int (input(" Please Enter the second number: "))
c = int (input(" Please Enter the third number: "))
average=(a+b+c)/3
print("The average of three numbers is ", average)
Ln:10 Col:0

```

4.

```

volume.py - C:/Users/hp/Desktop/volume.py (3.10.8)  -  □  ×
File Edit Format Run Options Window Help
r1 = 7
r2 = 12
r3 = 16
|
volume1 = (4/3*22/7*r1**3)
volume2 = (4/3*22/7*r2**3)
volume3 = (4/3*22/7*r3**3)
|
print("When the radius is",r1,"cm, the volume of the sphere will be", round(volume1,2),"cc")
print("When the radius is",r2,"cm, the volume of the sphere will be", round(volume2,2),"cc")
print("When the radius is",r3,"cm, the volume of the sphere will be", round(volume3,2),"cc")
Ln:4 Col:0

```

5.

```

speed.py - C:/Users/hp/Desktop/speed.py (3...  -  □  ×
File Edit Format Run Options Window Help
d=int(input('Enter distance in km '))
t=int(input('Enter time in hours '))
s=d/t
print('Speed = {:.2f} km per hours'.format(s))
Ln:5 Col:0

```

6.

```

circle.py - C:/Users/hp/Desktop/circle.py (3.10.8)  -  □  ×
File Edit Format Run Options Window Help
PI = 3.14
radius = float(input(" Please Enter the radius of a circle: "))
circumference = 2 * PI * radius
area = PI * radius * radius
print(" Circumference of a Circle = %.2f" %circumference)
print(" Area Of a Circle = %.2f" %area)
Ln:9 Col:0

```

Exercise

A. Tick (✓) the correct option.

- 1. (c)      2. (a)      3. (c)      4. (a)      5. (a)

B. Write 'T' for True and 'F' for False statements.

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

C. Fill in the blanks.

- 1. General      2. Chatbot
- 3. Siri, Google Assistant, Cortana
- 4. Tesla Bot      5. Self-driving

D. Answers the following questions.

- 1. Gaming industry uses AI technology to improve the strategic aspects of

games. The main objective of AI in games is to generate responsive, adaptive or intelligent behavior primarily in non-player characters similar to human like intelligence. Games such as F.E.A.R., Alien: Isolation and Tic-Tac-Toe use AI technology to present a different game scenarios and unpredictable opponents each time when a user plays the game.

2.

General AI	Narrow AI
General AI is a type of intelligence which could perform any intellectual task with efficiency like a human. The idea behind the general AI to make such a system which could be smarter and think like a human by its own.	Narrow AI is a type of AI which is able to perform a dedicated task with intelligence. Narrow AI cannot perform beyond its field or limitations, as it is only trained for one specific task. Hence it is also termed as weak AI. Narrow AI can fail in unpredictable ways if it goes beyond its limits.

3. A smart home has its devices interconnected through the internet, and the user can control functions such as security access to the home, temperature, lighting, and home theatre from their Smart phone Apps.

4. The Internet of Things, or IoT, is a system where different computing devices interact with each other to share information and data using the internet. With the increased availability of the internet facilities, the IoT is gaining momentum as more and more devices are getting connected to the internet.

Smart mobiles, smart security system, smart home are examples of IoT.

5.

Machine Learning	Deep Learning
Machine learning is a feature of artificial intelligence that provides the computer with the capability to automatically gather data and learn from the experience of the problems or cases they have encountered rather than specially programmed to perform the given task or work.	It is the process of learning by processing and analyzing the input data by several methods until the machine discovers the single desirable output. It is also known as the self-learning of the machines.

 **Competency Based Questions**

General AI





A.

T	E	S	L	A	B	O	T	M	A	L	E	X	A	N
L	J	T	N	T	M	B	L	B	R	R	D	B	N	J
E	H	W	B	B	C	C	K	Z	T	T	G	N	B	K
C	H	A	T	B	O	T	U	S	I	R	I	C	C	E
I	E	E	K	E	R	E	I	G	F	K	O	X	E	T
T	A	G	I	N	T	E	L	L	I	G	E	N	C	E
R	O	B	O	T	A	Z	A	Q	C	B	L	K	K	R
P	K	O	Z	P	N	S	D	E	I	X	J	H	I	I
O	L	T	X	U	A	W	G	T	A	V	G	D	U	C
I	S	O	P	H	I	A	L	U	L	T	D	A	R	A

B. Do yourself.

**Exercise**

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

1. T      2. F      3. F      4. F

C. Fill in the blanks.

1. World Wide Web, E-mail      2. Slow-speed  
3. hotspot      4. Ask.Jeeves      5. Flicker

D. Answers the following questions.

Dial-up Connection	Broadband Connection
In dial-up connection, the services connect to the internet through a phone line connection. It is established between two or more communication devices in which it uses Public Switched Telephone Network (PSTN).	It is a high-speed connection that allows using the telephone and internet simultaneously. In this, data can be transferred in various forms via cable, satellite, and telephone.
It has slow data transfer rate.	It is faster than dial-up connection.

It uses analog transmission for data transfer.	It uses digital transmission for data transfer.
--	---

- Wireless internet enables wireless connectivity to the internet via radio waves rather than wires on a person's home computer, laptop, smartphone or similar mobile device.
- Blogging is the process that implies creating articles, photos, opinions, stories, and other forms of content and publishing them on a website.
- You can also use + and - signs in front of the keywords to form a Boolean search. Use the + sign to include a keyword in the search result and the - sign to exclude it from the search result.

For example, to display the results that will include the recipes of various dishes that have chocolate in them, but not the recipe of chocolate cookies, frame the search term as +recipe +chocolate -cookies.

- A hotspot is a wireless network that provides Internet connections to mobile computers and devices. Most of the public locations, such as shopping malls, coffee shops, restaurants, airports and hotels have Wi-Fi hotspots. Although most hotspots enable unrestricted or open access, some require a password in order to connect to the Internet.
- Three cyber safety rules are as following:
  - Do not give out any personal information related to you, your family, or friends, like full names, addresses, telephone or mobile numbers. This information can be misused, so be careful with what you say.
  - When choosing your e-mail username, be careful not to pick a provocative name (like barbie789 or dude234) as you would be more likely to be sent offensive e-mails or harassed online.
  - Use your common sense; someone you are chatting with may not be who they say they are.

### Competency Based Questions

- Use hotspot
- planets - Neptune



- Hatchback + Cars – Honda
  - Weather + Rajasthan + June
  - Information + fruit + Apple – Computer
- Do yourself.



E. (a)  $(68)_{10} = (?)_2$

2	68	Remainder
2	34	0
2	17	0
2	8	1
2	4	0
2	2	0
2	1	0
	0	1

$\therefore (68)_{10} = (1000100)_2$

(b)  $(257)_{10} = (?)_2$

2	257	Remainder
2	128	1
2	64	0
2	32	0
2	16	0
2	8	0
2	4	0
2	2	0
2	1	0
	0	1

$\therefore (257)_{10} = (100000001)_2$

(c)  $(987)_{10} = (?)_2$

2	987	1
2	493	1
2	246	0
2	123	1
2	61	1
2	30	0
2	15	1
2	7	1
2	3	1
2	1	1
	0	

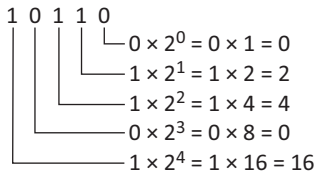
$\therefore (987)_{10} = (1111011011)_2$

(d)  $(658)_{10} = (?)_2$

2	658	Remainder
2	329	0
2	164	1
2	82	0
2	41	0
2	20	1
2	10	0
2	5	0
2	2	1
2	1	0
	0	1

$\therefore (658)_{10} = (1010010010)_2$

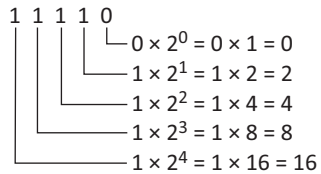
F. (a)  $(10110)_2 = (?)_{10}$



Addition =  $0 + 2 + 4 + 0 + 16 = 22$

$\therefore (10110)_2 = (22)_{10}$

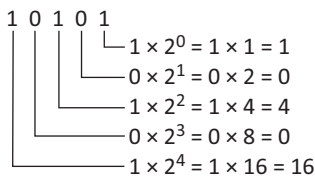
(b)  $(11110)_2 = (?)_{10}$



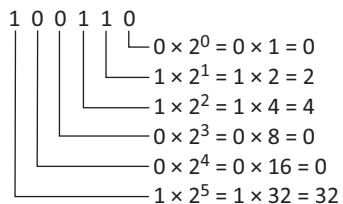
Addition =  $0 + 2 + 4 + 8 + 16 = 30$

$\therefore (11110)_2 = (30)_{10}$

(c)  $(10101)_2 = (?)_{10}$



(d)  $(100110)_2 = (?)_{10}$



$$\text{Addition} = 1 + 0 + 4 + 0 + 16 = 21$$

$$\therefore (10101)_2 = (21)_{10}$$

$$\text{Addition} = 0 + 2 + 4 + 0 + 0 + 32 = 38$$

$$\therefore (100110)_2 = (38)_{10}$$

### Competency Based Questions

1. Here are the steps to convert a number from octal to decimal:

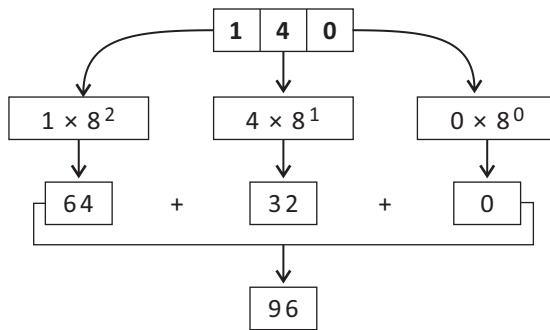
**Step 1** : Since an octal number only uses digits from 0 to 7, we first arrange the octal number with the power of 8.

**Step 2** : We evaluate all the power of 8 values such as  $8^0$  is 1,  $8^1$  is 8, etc. and write down the values of each octal number.

**Step 3** : Once the value is obtained, we multiply each number.

**Step 4** : Final step is to add the product of all the numbers to obtain the decimal number.

Let us look at an example, convert  $(140)_8$  into a decimal number.



2. See topic 'Binary Subtraction' on page 10, 11.



- A. 1. 1010  
2. 1101  
3. 10001  
4. 10100  
5. 11011
- B. Do yourself.


**Exercise**
**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

1. Virus      2. Alvi Brothers      3. Boot  
4. Macro      5. antivirus

**D. Answers the following questions.**

1. A computer virus is a small software program that spreads from one computer to another computer and that interferes with the computer operations. Virus can be classified as following :

**(a) Boot Virus :** Polyboot, B and Antix, Disk killer, Stoned virus, etc.

**(b) Program File Virus :** Sunday, Cascade, etc.

**(c) Other Electronic Infections :** Trojan horses, Worm, Malware, Spyware, etc.

2. See topic 'Symptoms of a Computer Virus' on book page no. 17.  
3. A virus can not appear on a computer by itself. It enters your computer mostly through e-mails, instant messages and risky website.

Computer viruses usually spread in one of the three ways:

- (a) from removable media such as floppy disk, compact disk, pendrives etc.  
(b) from files downloaded from the Internet and  
(c) from e-mail attachments.

Internet is the most common path for virus transmission. To protect your files, scan everything you download from the Internet.

4. **(a) Boot Virus :** The virus that infects a part of a hard disk or a floppy drive is referred to as boot sector virus. Boot sector is a crucial part of a disk where the operating system and boot programs will be stored. This virus becomes active at the time of booting of system.

**(b) Worm :** A worm is a malicious program that duplicates itself. They eventually fill up the disk space with copies of itself and there by make a computer system to work very slow. It uses computer networks and takes advantages of security weaknesses to replicate. The worm sends its files through the cables that connect many

computers. When the security is weak, the computer that is linked to the infected computer also gets affected.

(c) **Spyware** : A spyware is a computer software that is installed secretly on a computer to gather a user's personal information without his/her knowledge or consent. These program can change the computer's configuration or collect advertising data and personal information. Spyware can track internet searching habits and possibly redirect website activity. Spyware can also collect information about e-mail addresses, passwords and even credit card numbers.

(d) **Trojan horses**: These viruses do not replicate themselves and are designed to perform targeted activities. It is a simple program that pretends to be a useful application, whereas it always do something destructive. A Trojan horse is a computer program that tricks the user by acting as an original file. When the user opens the file, the virus starts the program automatically and begins to infect the system.

- See topic 'What a Computer Virus can do?' on book page no. 16.
- Antivirus software refers to an application that detects the type of virus in the computer and protects against it. It is a application software designed to detect and remove the virus from the computer system. Quick Heal and Kaspersky are popular antivirus software.

### Competency Based Questions

- Antivirus Software
- Program File Virus



A.

A	M	E	W	O	R	M	S	W	M	M	S
V	Q	U	B	T	R	O	J	A	N	C	P
A	A	O	R	C	B	O	O	T	L	A	Y
S	G	I	A	W	K	Q	A	M	A	F	W
T	Q	U	I	C	K	H	E	A	L	E	A
R	M	X	N	M	L	L	R	V	R	E	R
D	H	A	P	E	O	U	H	G	C	O	E
C	N	O	R	T	O	N	N	B	H	P	B

- B. 1.  2.  3.  4.  5.
- C. Do yourself.


**Exercise**
**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

1. Chart      2. Category      3. Title  
4. Legends      5. Filter

**D. Answers the following questions.**

1. **(a) Legends** : This identifies each data series in a unique colour or pattern.

**(b) Data Series** : It refers to the data entries from which a chart is derived.

**(c) Gridlines** : The gridlines are the horizontal and vertical lines drawn on the plot area. Gridlines make it easier to read and understand the values.

**(d) Data Label** : It provides additional information about a data marker (part of a chart that shows a particular data items of a data series).

**(e) Goal Seek** : Goal seek is an important feature of the spreadsheet that is used to find the values which are required to achieve a certain target. It allows changing the cell value which produces the desired target value.

**(f) Conditional Formatting** is a feature using which you can highlight selective data in a worksheet by formatting it in such a way that is stands out from the rest of the data.

2. A chart is an effective visual representation of data. Charts look more attractive than simple tabular forms. Charts make it a lot more easier for us to analyze and interpret data. Some charts are: Column chart, Bar chart, Line chart, Area chart, Pie chart, Stock chart, Surface chart, Doughnut chart, Bubble chart, Scatter chart and Radar chart.

3.	Column Chart	Bar Chart
	A column chart is a commonly used chart type to display in the form of vertical bars. It shows data changes over a period of time.	In this chart categories are shown along the x-axis and values along the y-axis. It is also show comparisons among individual items.

4. Chart Area includes all objects and elements in a chart while the Plot Area



in an Excel chart sits in inside the Chart Area, and contains the actual chart.

5. See topic 'Creating a Chart' on book page no. 27.

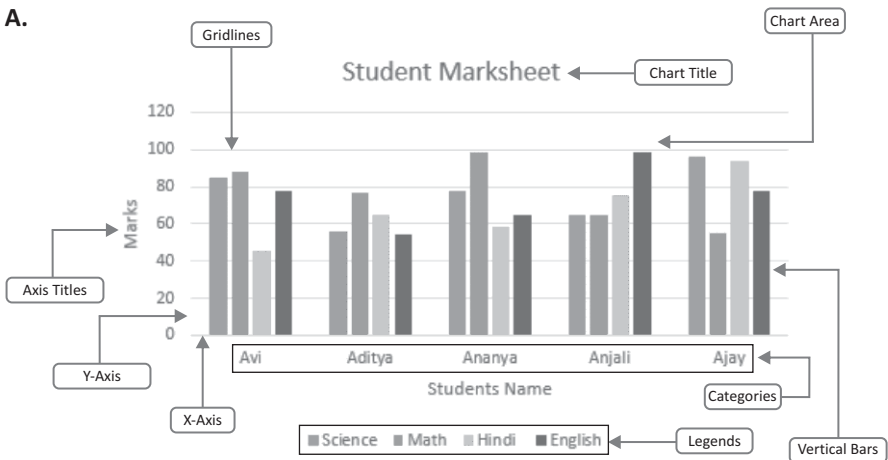


### Competency Based Questions

1. Column Chart, will be suitable option for this. Title should be 'Sales of Car'. X-axis should contain the name of months and Y-axis should contain the number of car sold.
2. Pie chart.
3. We can change the visual style of the chart any time after we have added the chart. Click on the chart and choose an appropriate style in the **Chart Styles** group on the **Chart Design** tab.



A.



B. Do yourself.

CHAPTER

4

## Introduction to Adobe Animate CC

### Exercise

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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

**C. Fill in the blanks.**

1. Stage
2. Stroke
3. .fla
4. Label text, Block text
5. PolyStar

**D. Answers the following questions.**

1. Adobe Animate (formerly Adobe Flash Professional, Macromedia Flash, and FutureSplash Animator) is a multimedia authoring and computer animation program developed by Adobe Inc. It is an animation software that allows the user to make animation projects using pictures, videos, sound and other effects.
2. Stroke Color is the outline of the shape while Fill color is inside of the shape.
3. Straighten, Smooth and Ink are the three modes of Pencil tool. Choose **Smooth** to draw smooth curved lines.
4. See topic 'Timelines' on book Page no. 39.
5. Erase Normal, Erase Fills, Erase Lines, Erase Selected Fills and Erase Inside are the options of Eraser Mode.
  - Erase Normal erases all lines and fills wherever the eraser is moved.
  - Erase Fills erases only the fill colours while lines are unaffected.

**Competency Based Questions**

1. The Selection Tool is used to select a single or multiple objects on the stage.
2. Brush Tool.
3. Use PolyStar Tool.

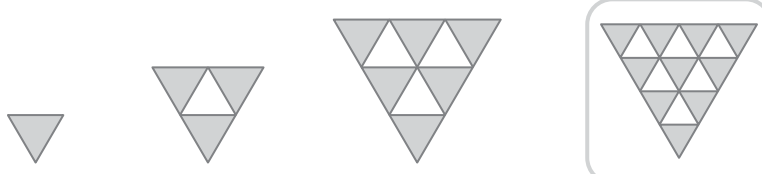


**A.**

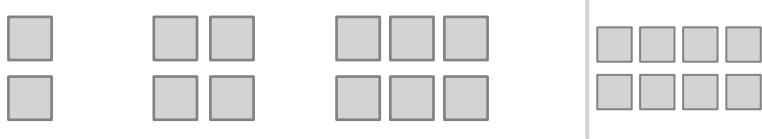
The screenshot shows the Adobe Animate workspace. At the top is the Menu Bar with options like File, Edit, View, Insert, Modify, Text, Commands, Control, Debug, Window, and Help. Below the menu bar is the Stage, a large white rectangular area where content is placed. At the bottom of the Stage is the Timeline, which includes a Playhead and a sequence of frames. To the right of the Stage are the Properties Panel and the Tools Panel. The Properties Panel shows settings for the selected object, and the Tools Panel contains various drawing and editing tools.

**B. Do yourself.**

**1**



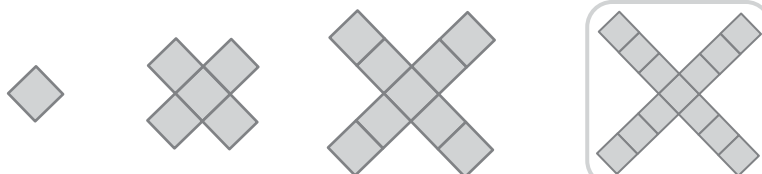
**2**



**3**



**4**



**Exercise**

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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

**C. Fill in the blanks.**

- 1. operand
- 2. True
- 3. Sequential
- 4. +
- 5. Colon ( : )

**D. Answers the following questions.**

- 1. See topic 'operators' on page no. 53.
- 2. '/' operator divides left hand operand by right hand operand and returns the quotient while '/' operator divides left hand operand by right hand operand and returns the quotient by removing the decimal part.

3.

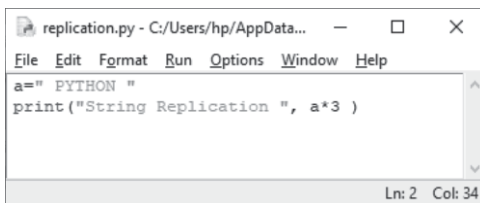
Assignment Operators	Relational Operators
Python assignment operators are used for assigning the value of the right operand to the left operand. Various assignment operators used in Python are (+=, -=, *=, /=, etc.)	Relational operators are used to compare the value of the two operands and returns True or False accordingly.

4. Syntax:

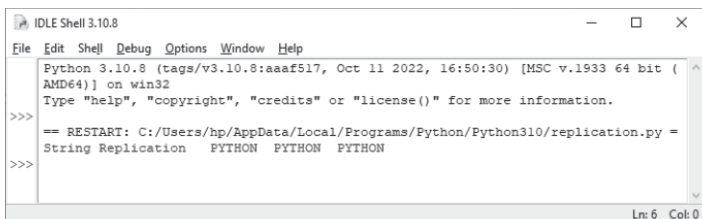
```
If<condition>:  
    statement 1  
elif<condition>:  
    statement 2  
else:  
    statement 3
```

5. When used with one string and one integer, \* is the string replication operator, repeating a single string how ever many times you would like through the integer you provide. With string replication, we can repeat the single string value the amount of times equivalent to the integer value.

Example



```
replication.py - C:/Users/hp/AppData...  
File Edit Format Run Options Window Help  
a=" PYTHON "  
print("String Replication ", a*3 )  
Ln: 2 Col: 34
```



```
IDLE Shell 3.10.8  
Python 3.10.8 (tags/v3.10.8:aaaf517, Oct 11 2022, 16:50:30) [MSC v.1933 64 bit (AMD64)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>> == RESTART: C:/Users/hp/AppData/Local/Programs/Python/Python310/replication.py =  
String Replication PYTHON PYTHON PYTHON  
>>>  
Ln: 6 Col: 0
```




**Exercise**
**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

1. .html      2. container      3. Notepad  
4. Colour      5. Web browser

**D. Answers the following questions.**

1. HTML is the language for describing the structure of Web pages. HTML gives authors the means to : Publish online documents with headings, text, tables, lists, photos, etc.

2. (a)

Container Tag	Empty Tag
Container Tag which contains text or other tags. It consists of a Start tag and an End tag. The Start tag indicates the beginning of a command and the End tag indicates the end of a command. An End tag is always preceded by a forward slash (/).	Empty Tag does not contain text or any other tag. It only has a Start tag. It does not have an End tag.

(b)

Simple Text Editor	WYSIWYG
In simple text editor, the user should have a proper knowledge of HTML tags. Notepad and WordPad are the examples of simple text editors.	In WYSIWYG (What You See Is What You Get) editors, a web page can be created quickly without knowing the HTML tags because it provides graphical interface. Microsoft Frontpage and Adobe Dreamweaver are two most popular WYSIWYG HTML editors.

- (c) HTML tags are the commands used to instruct a web browser about how the web page should be displayed while an attribute is a property that provides some additional information about a tag.
3. Heading is a title for a new section of the document. In HTML, we give headings to a document using the Heading tag. There are six levels of heading, i.e., <Hn> where, 'n' is a number, ranging from 1 to 6. It is a Container tag.



2. (a)
- | Ordered List  | Unordered List  |
|---|---|
| An ordered list is a list where all items are numbered. The numbers can be replaced with Roman numbers or with the letters of English alphabet. These numbers or alphabets can be used in both upper case and lower case. | An unordered list is also called bulleted list. Unordered lists are used to display random items which never require to place in a sequential manner. |
- (b) CELSPACING specifies the amount of space between the adjacent cells/columns of a table while CELLPADDING specifies the amount of space between the border and content of a cell/columns.
- (c) ROWSPAN specifies two or more rows to be merged while COLSPAN specifies two or more columns to be merged.
- See HTML code on book page no. 86.
  - See topic 'Creating Lists' on book page no. 82.
  - See table on book page no. 86.

### Competency Based Questions

- <OL>
- She can do so by using ordered list and unordered list.
- Use BORDER attribute 0. It specifies no border.



A.

D	I	Y	B	E	S	B	S	R	E	J
R	S	T	A	R	T	O	Y	F	D	B
F	D	Y	C	Q	A	R	O	E	H	C
G	O	P	K	W	R	D	K	D	I	D
H	N	E	G	R	E	E	J	C	O	R
J	B	O	R	D	E	R	H	O	R	F
I	O	O	O	B	G	C	O	L	O	R
R	T	N	U	F	T	O	G	S	W	G
U	W	E	N	S	U	L	D	P	S	I
D	W	I	D	T	H	O	Z	A	P	M
O	A	F	U	Z	E	R	C	N	A	J
P	N	G	I	R	I	F	B	E	N	G
Q	T	T	H	H	G	A	H	R	F	X

B. Do yourself. (See topic unordered list on book page no 83, 84.)



**Exercise****A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

1. Cybercrime      2. Cyberbullying      3. Virus  
4. spyware      5. Biometric

**D. Answers the following questions.**

1. Cybercrime is criminal activity that either targets or uses a computer, a computer network or a networked device.

For example : Email spoofing is a form of cyber-attack in which a hacker sends an email that has been manipulated to seem as if it originated from a trusted source. Email spoofing is a popular tactic used in phishing and spam campaigns because people are more likely to open an email when they think it has been sent by a known sender. The goal of email spoofing is to trick recipients into opening or responding to the message.

2. Cyberbullying is threatening behaviour or unwanted advances directed at another using the Internet and other forms of computer communications; whereas cyberstalking involves the repeated and deliberate use of the Internet and electronic communication tools to frighten, intimidated or harass someone.

3. **(a) Phishing** : Another way attackers steal your identity is through Phishing. Phishing is a type of attack which might happen beyond cyber safety measures, usually through emails. The e-mail usually begins with warm regards, followed by an interesting story and a malicious link.

**(b) E-mail Spoofing** : Email spoofing is a form of cyber-attack in which a hacker sends an email that has been manipulated to seem as if it originated from a trusted source. Email spoofing is a popular tactic used in phishing and spam campaigns because people are more likely to open an email when they think it has been sent by a known sender. The goal of email spoofing is to trick recipients into opening or responding to the message.

- (c) Malware** : Malware is any software intentionally designed to cause

damage to a computer, server, client, or computer network. Malware is short for “malicious software.” Malware is any kind of unwanted software that is installed without your adequate consent. The intent of the malware is to damage the data or functionality of the computer or network. A wide variety of types of malwares exist, including computer viruses, worms, Trojan horses, ransomware, spyware, adware, rogue software, and scareware.

4. See topic 'Cyber Security' on book page no. 100.
5. A virus can copy itself and spread to other computers by attaching themselves to programs and executing code when a user runs the infected program. A computer virus requires human action to spread to other computers and is often spread through email attachments and internet downloads.

### Competency Based Questions

#### E-mail Spoofing



A.

T	B	Q	A	N	T	I	V	I	R	U	S
C	Y	B	E	R	C	R	I	M	E	Q	B
M	W	H	N	K	J	N	R	B	N	E	E
A	D	J	C	D	G	B	U	R	H	A	F
L	A	K	R	W	D	C	S	D	E	F	I
W	S	P	Y	W	A	R	E	X	T	G	R
A	I	N	P	H	I	S	H	I	N	G	E
R	T	V	T	M	T	P	J	N	L	L	W
E	R	X	I	N	R	A	G	G	E	K	A
P	E	A	O	B	W	M	D	T	D	J	L
O	W	L	N	C	O	O	K	I	E	H	L

B. Do yourself.

### CHAPTER 9

#### AI for SDGs

### Exercise

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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





files and other digital data bi-directionally. The infrared transmission technology used in computers is similar to that used in consumer product remote control units like television remotes and game remotes. Unlike Wi-Fi and Bluetooth technologies, infrared network signals cannot penetrate walls or other obstructions and work only in the direct "line of sight."

- (c) A protocol is a set of rules that are agreed by both sender and receiver, without a protocol two devices can be connected to each other but they cannot communicate. In order to establish a reliable communication or data sharing between two different devices we need set of rules that are called protocol.
- (d) Wi-Fi is an abbreviation for wireless-fidelity. Wi-Fi is the most popular wireless communication technology used for homes, private business LANs and public hotspots.

A Wi-Fi enabled device such as a PC, video game console, mobile phones or MP3 player can connect to the Internet when it comes within the range of a wireless network. Wi-Fi allows us to deploy local area networks without wires thus reduces the cost of the network expansion.

5. (a)

LAN	MAN
1. Short for local area network.	1. Short for metropolitan area network.
2. Connects a group of computers within a limited geographic area.	2. Confined to a city or town. Distance coverage is larger than LAN.
3. Limited to 100 to 1000 meters.	3. Distance coverage is upto 100 kilometers.
4. High bandwidth for data transfer.	4. Bandwidth is moderate for data transfer.

(b)

Hub	Switch
1. A Hub is a networking device that allows you to connect multiple PCs to a single network.	1. Switch connects various devices together on a single computer network.
2. A Hub operates on the physical layer.	2. Switch operates on the data link layer.
3. Hub uses electrical signal orbits.	3. Switch uses frame & packet.

- (c) The main difference between Wi-Fi and WiMAX is that Wi-Fi range is about 30 meters, whereas WiMAX can cover an area within a radius of 50 km with wireless access.

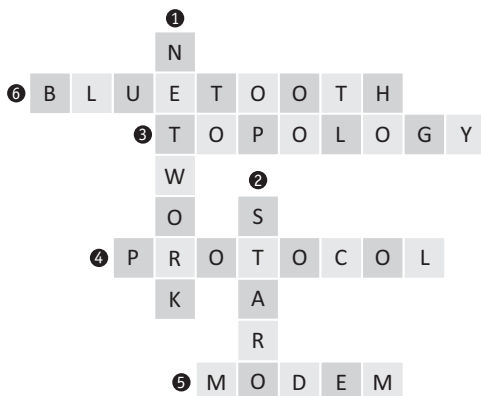


## Competency Based Questions

1. LAN
2. Ring topology
3. Wi-Fi



A.



B. Do yourself.

CHAPTER

2

## Introduction to MS Access 2016

### Exercise

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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

C. Fill in the blanks.

1. database
2. Primary
3. Design
4. Query
5. Text

D. Answers the following questions.

1. (a) A database is a collection of interrelated data of a particular type. It is a container for data and its associated objects. The data remains in organized manner in a database.  
(b) Tables are the primary unit of a database. The data in a table is

organized in the form of rows and columns. Every table has a finite number of columns and rows.

- (c) Primary key is a standard feature of every database management system. It is a unique identifier for a particular record in a table. It does not contain any duplicate data. A table can have only one Primary key.
  - (d) A validation rule is used to limit a field entry to meet certain criteria. By validation rules, you can ensure that the correct value is entered into the field. If the user makes an incorrect entry, error alert can stop the user, provide a warning or just provide information.
  - (e) The rows in a table are called records. A record contains the values for all the fields that belong to a single person or on entity.
2. A database management system is a software that helps to manage large amount of data. It involves creating, modifying, deleting and adding data in database in such a way that users can retrieve and manipulate data efficiently and quickly.

The primary objective of a DBMS is to provide a convenient method of storing and retrieving information from a database. Oracle, Microsoft Access 2016, Microsoft Visual FoxPro, Sybase are some example of the popular DBMS software available.

3. Primary key is a unique identifier for a particular record in a table.

4.

Datasheet View	Design View
In Datasheet view, tables are seen exactly the way they are. We generally use the Datasheet view for creating tables, entering data into them and also for editing data.	The Design view is useful to specify the design (field names, their data types and field properties) of a table or to modify the design of an existing table.

5. See topic 'Creating a Table using Design View' on book page no. 23.
6. See topic 'Modifying Table Design' on book page no. 24, 25.

### Competency Based Questions

1. The database name may be 'School Management System'. For tables, see topic 'Creating Tables' on book page no. 22, 23.
2. Access opens the table in Datasheet view. Select the field that you want to change. On the Fields tab, in the Properties group, click the arrow in the drop-down list next to Data Type, and then select a data type. Save your changes.
3. See topic 'Creating Validation Rules' on book page no. 29.



A.

Name	Age	Class
Ajay	15	X
Saurav	15	IX
Shalini	14	VIII
Surbhi	15	IX

A Database can contains:

↓ Many **Tables**

A Table can contains:

↓ Many **rows and Columns**

A Record can contains:

↓ Many **Values**

A Field can contains:

↓ Many **Data values**

B. Do yourself.

CHAPTER  
**3**

## Queries, Forms and Report in MS Access

### Exercise

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

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

C. Fill in the blanks.

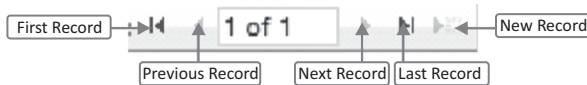
1. Query, Form, Report      2. two      3. criteria  
4. Layout      5. Field

D. Answers the following questions.

- (a) A Query is a database object which allows you to display specific records from a table (or from two or more linked tables), often based on a condition.  
(b) Forms are used to enter, edit and display data stored in tables in a user-friendly manner. MS Access links a form to a table and stores the information that you enter in the form into the table. A form is a very good option to use when you have numerous field in a table. This way you can see all the fields in one screen.  
(c) A Report is an effective way of presenting the data stored in a table or query in a printed format. The Report object allows us to control the way the data is displayed when it is printed on paper.
2. See book page no. 36.



- Access provides three main views in which a form is displayed :  
**Form View** is used to enter, edit and view data.  
**Design View** is used to adjust the design of your form. It gives you a more detailed view of the structure of a form, such as Header, Detail, and Footer sections.  
**Layout View** is used to change the appearance and size of various controls of a form.
- Criteria row is used to specify the condition on the basis of which the records will be filtered.
- The form window behaves like a user-friendly-display. We can view and move through the various records by using the different navigation buttons situated at the bottom of the Form window.







- Relationships in a database help create meaningful information. As a result database relationships result in: Reduced data redundancy. Relationships help reference information stored in existing tables. reducing repetition.

### Competency Based Questions

- Set relationship between tables.
- Do yourself.
- See topic 'Reports in Access' on book page no. 40, 41.



- A.**
-           Datasheet View           
 Uses:          To display the table
  -           Design View           
 Uses:          To display the table
  -           Table           
 Uses:          It is used to create table.
  -           Query Design           
 Uses:          It gives us more control over creating a query.

- B.** Do yourself.

## Exercise

### A. Tick (✓) the correct option.

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


### B. Write 'T' for True and 'F' for False statements.

1. T      2. T      3. T      4. T      5. T

### C. Fill in the blanks.

1. instance      2. frames, layers      3. Animation  
4. motion      5. Frame by frame

### D. Answers the following questions.

- A symbol is a reusable object, and an instance is an occurrence of a symbol on the stage.
- To insert a new layer, click New Layer  button from the Timeline panel. You can also insert new layer by clicking on Insert → Timeline → Layer.
- See topic 'Animation in Animate CC' on book page no. 49.

4. (a)

Frame	Keyframe
A frame holds the contents at a particular moment. We create animation by changing the content of successive frames. Inserting more frames increases, and deleting frames decreases the duration of the animation.	Keyframes are those frames where major changes take place such as moving, changing shape, fading, spinning and soon. Thus a keyframe is a special frame which signals a change or action.

(b)

Frameby-Frame Animation	Tweened Animation
This is the traditional style of animation where we need to draw every frame of it, describing the process of the movement frame by frame in great detail. Such animation is used when you want to show progression of events, like creating a walking process.	Adobe Animate CC creates animation automatically where the user needs to define the properties between the first and last frame. The movement of an object in between the frames is called Tween.

(c)

Motion Tween	Shape Tween
This is one of the basic animation techniques. Motion tween refers to any object that travels from one point	Shape tween is a technique, which smoothly morphs one shape into another. Any kind of animation that

to another and involves no change in the shape or size of the object over a period of time. However, changes may occur in colour, texture or distance of the objects.

requires the stroke or the fill of a shape to change- for example, animation of clouds, water, or fire-is a perfect example of shape tween.

### Competency Based Questions

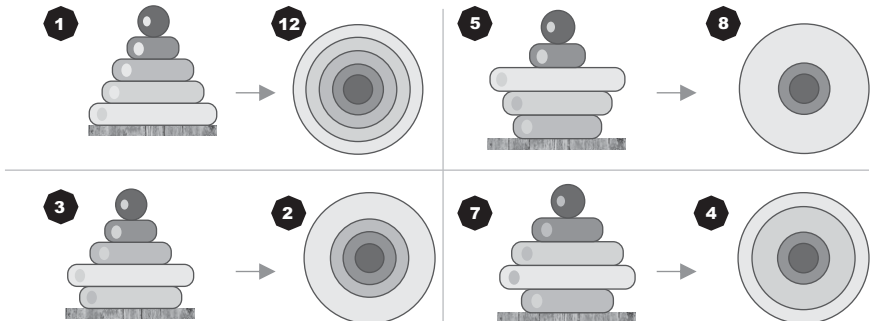
1. See topic 'Creating A Symbol' on book page no.-46.
2. See topic 'Shape Tween' on book page no.- 53, 54.
3. See topic 'Tweened Animation' on book page no. 49.

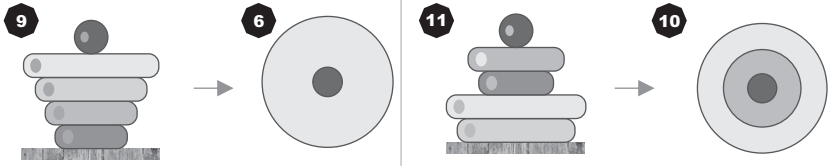


A.

O	A	M	C	B	G	B	T
Q	N	T	A	V	H	F	R
T	I	M	E	L	I	N	E
X	M	A	K	E	N	L	L
S	A	S	J	S	S	O	A
Y	T	K	H	D	T	P	Y
M	I	I	F	R	A	M	E
B	O	N	E	X	N	E	R
O	N	G	Q	Z	C	X	G
L	U	K	V	C	E	V	M

B. Do yourself.





**Exercise**

**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

1. T      2. T      3. T      4. T      5. T

**C. Fill in the blanks.**

1. .PSD                              2. Workspace                              3. Lasso  
4. Move                              5. foreground, background

**D. Answers the following questions.**

- Adobe Photoshop CC is a graphics editing program developed and published by Adobe Systems. Photoshop creates a virtual studio for artists and designers. It is used by graphics designers, professional photographers and independent users to edit designs as well as create and manipulate images. The uses of Photoshop are tremendous, limited of our creativity and imagination.  
It is widely used for image editing, retouching, creating image compositions, and adding effects.
- The Lasso Tool is a freehand selection tool. It is used for selecting irregular shapes while rectangular marquee tool is used to select a rectangular or square area of an image.
- Magic Wand Tool selects area of similar color pixels around it with just one click. One of the most common uses of this tool is to remove the background of an image leaving the main object in place. It works best when the image has few colors only or the background and the object is clearly differentiated.
- Marquee tool is a selection tool that is used to select an image or part of it in rectangular, square, elliptical or circular shape. While the Lasso Tool is a freehand selection tool. It is used for selecting irregular shapes.
- See topic 'Cropping Tool' on book page no. 68, 69.

6. **Step 1** : In the Edit workspace, use a selection tool to select the area you want to copy.
- Step 2** : Chosse Edit > Copy to copy the selection to the clipboard.

### Competency Based Questions

1. Cropping Tool
2. Gradient Tool
3. Lasso Tool



- A. See book page no. 64.
- B. Do yourself.

## CHAPTER 6

## More on Adobe Photoshop CC

### Exercise

- A. Tick (✓) the correct option.**
1. (b)
  2. (c)
  3. (b)
  4. (a)
  5. (a)
- B. Write 'T' for True and 'F' for False statements.**
1. T
  2. T
  3. T
  4. T
  5. T
- C. Fill in the blanks.**
1. editing, retouching
  2. layers
  3. vertical type
  4. Spot healing
  5. Sharpen
- D. Answers the following questions.**
1. The Retouching tools help to remove the flaws and imperfections in an image. This is done by applying predefined patterns, special effects, replacing colours, etc., which means editing the pixel arrangement in an image or any selected portion of the image. Following are the retouching tools available in Photoshop CC.  
Spot Healing Brush tool, Clone Stamp tool, Patch tool, Dodge tool.
  2. The Pattern Stamp Tool lets you fill an area with a selected pattern. It works quite similar to Clone Stamp Tool, but the only difference is that after defining the appropriate options in the Context menu and selecting the pattern from the Pattern Picker, you do not have to select the source point in the image. Place the pointer inside the area to be painted with pattern and drag the mouse.

3. **Dodge Tool:** It is used to make the darker portions of the image lighter.  
**Burn Tool:** It is used to give a burning effect, that is, to darken the pixels of the image or a selected portion of the image.  
The Dodge tool brightens pixels, the Burn tool darkens pixels and the Sponge tool affects their saturation.
4. The Spot Healing Brush tool is used to quickly repair imperfections such as blemishes, dark spots, scratches, and so on in the images and photographs. This tool automatically samples from around the area being repaired.
5. To rename a layer, double-click on the layer name in the Layers palette and type a new name.
6. The background layer is the bottommost layer in the Layers palette. When you import an image from a scanner or digital camera, the entire image will be placed on the background layer.



### Competency Based Questions

1. Color Replacement tool
2. Do yourself.



A.



#### Hand Tool

Uses

It allows you to move your image while you're zoomed in to more than 100% and part of the image is out of view.



#### Rectangular Marquee Tool

Uses

To select a rectangular or square area of an image.



#### Blur Tool

Uses

Blur Tool can be used to blur out a background or create a soft tone in the selected area of a photograph or image.



#### Magic Wand Tool

Uses

It selects area of similar color pixels around it with just one click.



#### Lasso Tool

Uses

It is used for selecting irregular shapes.



#### Eraser Tool

Uses

It erases the desired area.

B. Do yourself.


**Exercise**
**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

1. T      2. T      3. T      4. T      5. T

**C. Fill in the blanks.**

1. Alt      2. container      3. hyperlink  
4. <OPTION>, <SELECT>      5. <TEXTAREA>

**D. Answers the following questions.**

- The <IMG> tag is used to insert images in the HTML documents and SRC attribute tells the browser where to find the image.
- See topic 'Inserting Images' on book page no. 90.
- See topic 'Anchor tag (<A>.....(</A>)' on book page no. 93.
- See topic 'The <INPUT> Tag' on book page no. 97.
- <INPUT> tag.

**Competency Based Questions**

- <IMG> Tag
- See topic 'Linking in HTML' on book page no. 93.
- See HTML Code on book page no. 98.



Do yourself.


**Exercise**
**A. Tick (✓) the correct option.**

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

**B. Write 'T' for True and 'F' for False statements.**

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

**C. Fill in the blanks.**

- 1. While
- 2. For
- 3. Start, Stop, Step
- 4. Colon
- 5. 0

**D. Answers the following questions.**

- 1. Loops are important in Python or in any other programming language as they help you to execute a block of code repeatedly. You will often come face to face with situations where you would need to use a piece of code over and over but you don't want to write the same line of code multiple times.
- 2. The range() function is an in-built function of Python. It returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number.
- 3. While <condition>:  
statements

4. (a)

Break Statement	Continue Statement
The break is a keyword in Python which is used for bringing the program control out of the loop. The break statement halts the execution of a loop and program flow switches to the statement after the loop. A single break statement will break out of only one loop.	When the program encounters the continue statement, it will skip all the statements present after the continue statement inside the loop, and proceed with the next iterations.

(b)

For loop	While loop
For loops are typically used when the number of iterations is known before entering the loop. It is also known as definite loop.	The while statement executes a set of statements repeatedly, until the logical expression evaluates to true. When the condition become false, the control comes out of the loop.

 **Competency Based Questions**

Break Statement



- A.
- 1. No Error
  - 2. No Error
  - 3. No Error



B. 1.

```

armstrong.py - C:/Users/hp/AppData/Local/P...
File Edit Format Run Options Window Help
num = int(input("Enter a number: "))
sum = 0
n1 = len(str(num))
temp = num
while temp > 0:
    digit = temp % 10
    sum += digit ** n1
    temp //= 10
if num == sum:
    print(num, "is an Armstrong number")
else:
    print(num, "is not an Armstrong number")
Ln: 13 Col: 0

```

2.

```

table.py - C:/Users/hp/AppData/Local/Programs/Py...
File Edit Format Run Options Window Help
num = int(input("Enter the number : "))
i = 1
# using for loop to iterate multiplication 10 times
print("Multiplication Table : ")
for i in range(1, 11):
    print(num, 'x', i, '=', num*i)
Ln: 1 Col: 0

```

3.

```

even.py - C:/Users/hp/AppData/Local/Programs/Pyth...
# Python program to print Even Numbers in given range
start = int(input("Enter the start of range: "))
end = int(input("Enter the end of range: "))
# iterating each number in list
for num in range(start, end + 1):
    # checking condition
    if num % 2 == 0:
        print(num, end=" ")
Ln: 11 Col: 27

```

4.

```

number.py - C:/Users/hp/AppD...
File Edit Format Run Options Window Help
print('Numbers from 1 to 100:')
n = 1
while n <= 100:
    print(n, end=' ')
    n = n+1
Ln: 5 Col: 11

```

5.

```

odd.py - C:/Users/hp/AppData/Lo...
File Edit Format Run Options Window Help
num=int(input("Enter the Limit:"))
if num%2==0:
    for i in range(num-1,0,-2):
        print(i)
else:
    for i in range(num,0,-2):
        print(i)
Ln: 2 Col: 12

```

### Exercise

A. Tick (✓) the correct option.

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

B. Write 'T' for True and 'F' for False statements.

- 1. T      2. T      3. T      4. T      5. T

C. Fill in the blanks.

- 1. Rock, Paper and Scissor      2. Computer vision
- 3. Deep Learning      4. Mystery Animal      5. IBM Waston

D. Answers the following questions.

- 1. Big data and AI have a synergistic relationship. Big data analytics

leverages AI for better data analysis. In turn, AI requires a massive scale of data to learn and improve decision-making processes.

2. Natural language processing is a subset of artificial intelligence that helps machines comprehend, interpret, and manipulate natural language used by humans like text and speech.

Its main objective is to fill the gaps between computer understanding and human communication.

3. Computer vision is a field of artificial intelligence that trains computers to interpret and understand the visual world. Using digital images from cameras and videos, and deep learning models, machines can accurately identify and classify objects - and then react to what they "see."

Thus computer vision demonstrates the ability of a machine to gather and analyze visual data before making predictions about it.

4.
  - Have you ever missed a phone call and read the automatic transcript of the voicemail in your email inbox or smartphone app? That's speech-to-text conversion, an NLP capability.
  - Have you ever navigated a website by using its built-in search bar, or by selecting suggested topic, entity or category tags?
5. See topic 'Computer Vision Application' on book page no. 124.
6. Some of the famous applications, that widely use computer vision are:

Autonomous vehicles, Detection of different diseases, optical character recognition, Attendance system, Facial recognition, Robotics, Security etc.



### Competency Based Questions

1. You can access Google's "Mystery Animal" game in several ways:
  - Go to the website at:  
<https://mysteryanimal.withgoogle.com/> and click "Preview it here".
  - Speak to the Google Assistant app on your phone and say "Ok Google, task to Mystery Animal".  
Click on 'Start' to play the game.
2. (a) TEHOLOGYNC = TECHNOLOGY  
(b) ITLNLIGETN = INTELLIGENCE



Do yourself.