ANSWER KEY

Touchpad PRIME Ver 2.0
Class-8

1. Latest Technological Developments

1. BMW 2. HONDA 3. CAT 4. APPLE

Rapid Fire

1. a. (ii) b. (ii) c. (i) d. (i) e. (ii)

2. a. F b. T c. F d. F

Evaluation Time

1. a. Augmented Reality b. RPA c. Shakey
d. Virtual e. RP

2. a. AI is the branch of computer science that aims at creating expert and intelligent computer systems which simulate certain human qualities such as, learning, reasoning, communicating, seeing, hearing, and sensation.

b. Pattern Recognition software comprises of a camera and software which together identify repetitive patterns and establish connections between the patterns stored in the database and the perceived patterns.

c. Rapid prototyping is used to create models to quickly test a new product before mass production. 3D Printing can be termed as a RP method.

d. RPA refers to the process of automating certain tasks in an industry through the use of robots. The purpose of RPA is to transfer the execution of the process from humans to robots.

e. Intelligent Apps are software written for mobile devices based on artificial intelligence and machine learning technology, aimed at making everyday tasks easier.

3. a. (i) Expert system can be defined as a communicating computer program that can solve problems which would otherwise require human assistance. These programs replicate the reasoning process of experts in certain areas.

IMPRINT 1

(ii) Intelligent agent is a type of computer program that has built-in intelligence which keeps a check on the work patterns, asks questions and performs tasks on the behalf of the user.

(iii) Augmented Reality is the blending of Virtual Reality and real life. AR is using technology to superimpose information such as sounds, images and text on the real world that we can see.

(iv) Virtual Reality refers to a virtual world that the user can interact with. While in VR, the user cannot easily distinguish between what is real and what is virtual. VR provides a total immersive experience to the user.

b. Applications of AR are:

1. SixthSense device
2. Google Glass
3. Star Walk app
4. Coloring book

Applications of VR are:

1. Head Mounted Display
2. VR Simulation technology

c. IoT are the system of connected computing devices, mechanical and digital machines for creating a virtual network where a monitoring center ensures that everything is working smoothly. Each connected device has a unique identifier and can transfer data over the network without any human intervention. The connected devices gather and share data about their usage and their operative environment. The devices can be your smartphones, refrigerators, televisions, washing machines, etc.

d. AR stands for Augmented Reality, in this technology virtual objects are created and visualized alongside with real life objects. Whereas VR or Virtual Reality is completely virtual yet it feels real. While using the AR tech, you can partially see the real world, whereas the VR tech completely cuts you off from the real world. It takes you to a virtual world where everything is just a simulation.

Activity Time

Find Out

Do yourself.

In The Lab

Do yourself.

2. Computer Networking

Rapid Fire

1. a. (i) b. (ii) c. (iii) 4. (iii)

2. a. T b. T c. T d. T

Evaluation Time

1. a. Protocol b. SMTP c. Router d. Mesh e. NIC

2. a. Protocol is a set of rules that governs the communication between the computers over a network.

b. The components needed for a network are Network Interface Card, networking cable, hub or a switch and router.

c. A client is a computer which depends on the server for all the resources.

A server controls the access to the hardware and software on the network.

d. Topology refers to the geometric arrangement of computers or nodes in a network.

e. A gateway is a network device that allows to data to flow between two different networks which may use different protocols.

3. a. The computer network means a system of interconnected computers. The advantages of computer network are:

(i) The information can be easily shared by the people.

(ii) It helps in reducing the cost of hardware.

(iii) Store information on one centralised location.

(iv) Reliability implies backing up of information. If a system crashes, then the information is accessible on another workstation for future use.

(v) Reduction in installation cost.

(vi) User authentication process to secure the data.

(vii) People will have the accessibility to all the information they need to get and share through e-mails

b. A LAN is a digital communication system that interconnects a larger number of computers

and other peripheral devices within a radius of less than 1 km.

MAN consists of two or more local area networks or campus area networks together that usually spans several buildings in the same city or town.

c. Web page: A single digital page on the World Wide Web (WWW) that contains information and links of another pages is called a web page. Web pages are created by using the Hyper Text Markup Language (HTML).

Website: A website is a collection of web pages which are interlinked to each other. A website may contains thousands of web pages.

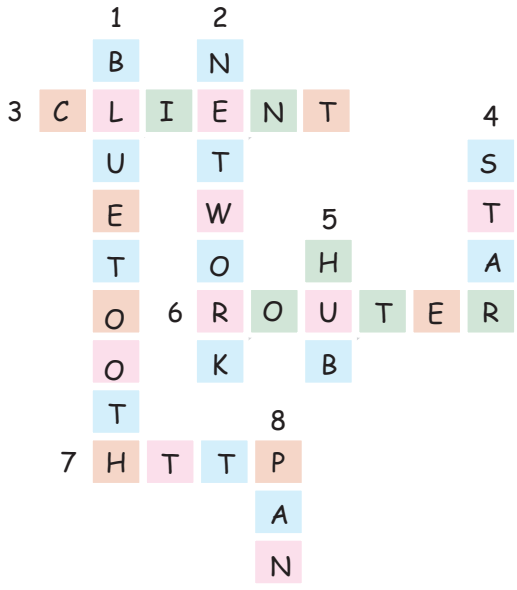
d. Sender: A sender is a computer that wants to send information to other computer connected to the network.

Receiver: A receiver is a computer which is expecting the data from other computer on the network.

Activity Time

1. a. Ring Topology b. Network Server

2.



In The Lab

Do yourself.

Periodic Assessment–1

(Based on chapters 1 to 3)

A. 1. Augmented Reality 2. Virtual Reality
3. Global Positioning System 4. Natural Language Processing
5. Portable Document Format 6. Internet Protocol

B. 1. Ring 2. Tree 3. Bus 4. Star

C. 1. Construction and Art & Jwellery.

2. 1. Used to product the molecular structure.
   2. Used to analyse geological data to identify and locate minerals.

3. 1. Face recognition, 2. Voice matching

4. 1. Google glasses 2. Star walk

5. 1. Automatic tasks, 2. Perform complex operations

3. Working with Access 2016

1. b. 2. e. 3. d. 4. c.
5. a.

Rapid Fire

1. a. (iii) b. (i) c. (ii) d. (ii) e. (iv)

2. a. T b. F c. F d. T

Evaluation Time

1. a. table b. fields c. primary d. sorting e. navigation

2. a. Adding:

Step 1: Open the required table in Datasheet view.

Step 2: Place the pointer where you want to add the new record.

Deleting:

Step 1: Open the required table in Datasheet view.

Step 2: Select the record which you want to delete.

Step 3: Right-click and select the Delete Record option.

b. Short text, Long Text, Number and currency

3. a. Some of the important benefits or advantages are:

- It minimizes the duplication of data by integrating and sharing the data files.
- It saves the storage space.
- All the users are provided with some access rights or privileges and permissions.
- The files can be easily updated whenever any changes are being made.

b. 1. Datasheet view is the default view of the table. It shows all the fields and the records as entered by the user.

2. In Design view, the records are not visible. You can only see the field names along with their data types.

c. Following rules you should remember while writing field names:

- Field name can be up to 64 characters long.
- Field name can include any combination of letters, numbers, spaces, and special characters except a period (.), an exclamation mark (!), an accent grave (‘) and brackets ([ ]).
- Field name cannot begin with the leading spaces.
- Field name cannot include a double quotation mark (“).

Activity Time

1. Sorting

2.

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

In The Lab

Do yourself.

4. More on Access

1. c 2. a 3. d. 4. b.

Rapid Fire

1. a. (iii) b. (i) c. (ii) d. (ii)

2. a. F b. F c. F d. T e. T

Evaluation Time

1. a. Title, logo b. Select query c. Relationship d. Run

2. a. A form is a database object used to add, edit and display data from a table in a user-friendly manner.

b. A report in Access is a feature which allows you to organize and present your data in a user-friendly format so that it can be printed.

c. The three main views in which a form can be displayed are: Form View, Design View, Layout View.

3. a. A query is the most important object provided by Access that can give you information that you might not be able to find by looking at the table directly.

A report in Access is a feature which allows you to organize and present your data in a user-friendly format so that it can be printed.

b. To create a report, follow these steps:

Step 1: Open the desired table for which you want to create a report. In this case, we have open the table named "StudentsMarks".

Step 2: Click on the Report command from Reports group under Create tab.

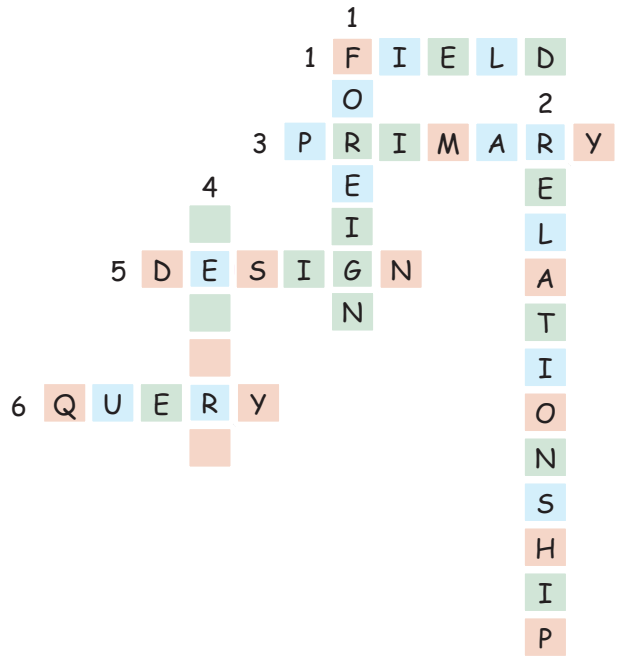
c. The parameters of the design grid in the bottom part of the Query window are:

- Field: It is the first row of the design grid that displays the selected field names from the table.
- Table: It displays the name of the existing tables in the relationship window.
- Show: This means that the field with the check mark will be displayed in the result and the fields with an uncheck mark will not be displayed when the query runs.
- Sort: It displays the data in either descending or ascending order during the run time.

Activity Time

1. a. Forms b. Query c. Crosstab Query

2.



Do yourself.

5. More on HTML

1. b. 2. d. 3. a. 4. c.

Rapid Fire

1. a. (ii) b. (iii) c. (iii) d. (ii) e. (ii)

2. a. F b. F c. F d. T

Evaluation Time

1. a. internal link b. <A> c. Direction d. <FRAME SET>

2. a. HREF stands for Hypertext Reference.

b. ALINK attribute is used to set the color of the active link.

c. Frames are the different sections or parts of a web page.

d. BORDER specifies the thickness of the border surrounding the image.

e. COLS attribute is used to divide the window into horizontal sections.

3. a. (i) The SCROLLAMOUNT attribute is used to specify the speed of the moving object in a marquee.

(ii) The HREF means Hyperlink Reference which gives reference to the address of the web page.

(iii) The ALT attribute specifies the alternate text to be displayed in the web browser, if the provided image is not found.

b. Attributes used with <IMG> tag are SRC, WIDTH, HEIGHT, ALIGN, BORDER and ALT.

c. <A HREF = "Display.html"> Display</A>

d. The attributes of the <FRAME> tag are:

(i) FRAMEBORDER: This attribute is used to define whether a border is to be created around the frame or not.

(ii) NORESIZE: This attribute is used to restrict the user to resize the frame on the web page.

(iii) SRC: This attribute is used to define the URL or path of the web page which is to be linked to the frame.

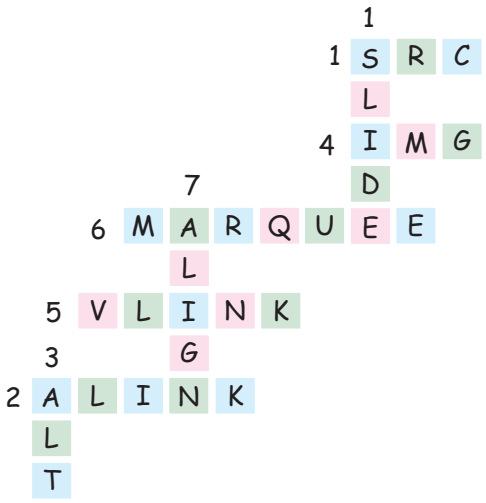
Activity Time

1. a. <FRAMESET> tag

b. Yes, by using <MARQUEE> tag

c. <IMG> tag

2.



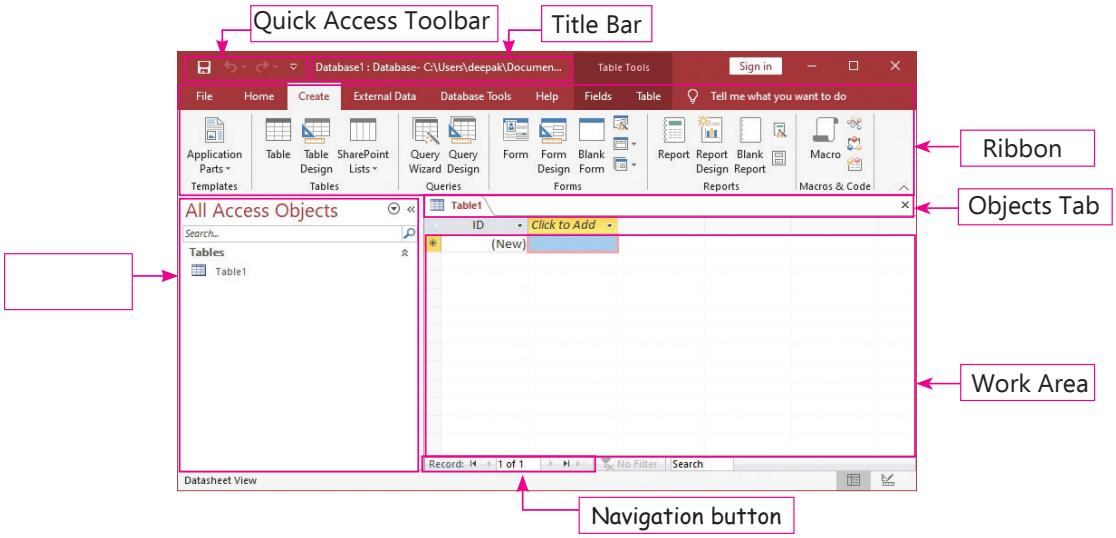
In The Lab

Do yourself.

Periodic Assessment–2

(Based on chapters 3, 4 & 5)

A.



B. 1. Primary Key is a unique field by which the records are uniquely identified in a table. A table can have only one primary key. For example, in a student's record the 'Reg No.'can be called a primary key.

2. A report in Access is a feature which allows you to organize and present your data in a user-friendly format so that it can be printed.

3. A query is the most important object provided by Access that can give you information that you might not be able to find by looking at the table directly.

4. A form is a database object used to create, edit and display data stored in tables in auser-friendly manner.

C. 1. Rows attribute is used to divide the window into vertical sections.

2. FRAMEBORDER attribute is used to define whether a border is to be created around the frame or not.

3. NORESIZE attribute is used to restrict the user to resize the frame on the web page.

4. ALINK attribute is used to set the color of the active link.

5. VLINK attribute is used to set the color of the visited links.

6. TARGET attribute is used to specify the place in which the linked web page will open.

Test Sheet–1

(Based on chapters 1 to 5)

1. a. (iii) b. ( ) c. (iv) d. (ii)

e. (ii) f. (SixthSense) g. (iii)

2. a. Augmented Reality b. RPA c. SMTP d. Router

e. sorting f. Select query

3. a. F b. F c. T d. T

e. F f. T

4. a. AI is the branch of computer science that aims at creating expert and intelligent computer systems which simulate certain human qualities such as, learning, reasoning, communicating, seeing, hearing, and sensation.

b. Pattern Recognition software comprises of a camera and software which together identify repetitive patterns and establish connections between the patterns stored in the database and the perceived patterns. Facial recognition software, video surveillance cameras, fingerprint identification and automatic voice recognition software are some examples of pattern recognition software.

c. A client is a computer which depends on the server for all the resources.

A server controls the access to the hardware and software on the network

d. Topology refers to the geometric arrangement of computers or nodes in a network.

e. To add records:

Step 1: Open the required table in Datasheet view.

Step 2: Place the pointer where you want to add the new record.

Deleting: Step 1: Open the required table in Datasheet view.

Step 2: Select the record which you want to delete.

Step 3: Right-click and select the Delete Record option.

To delete records:

Step 1: Open the required table in Datasheet view.

Step 2: Select the record which you want to delete.

Step 3: Right-click and select the Delete Record option.

f. A report in Access is a feature which allows you to organize and present your data in a user-friendly format so that it can be printed.

g. ALINK attribute is used to set the color of the active link.

5. a. (i) Expert system can be defined as a communicating computer program that can solve problems which would otherwise require human assistance. These programs replicate the reasoning process of experts in certain areas.

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MAN consists of two or more local area networks or campus area networks together that usually spans several buildings in the same city or town.

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e (i) The SCROLLAMOUNT attribute is used to specify the speed of the moving object in a marquee.

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(iii) The ALT attribute specifies the alternate text to be displayed in the web browser, if the provided image is not found.

6. Introduction to Photoshop

1. Lasso tool
2. Polygonal Lasso Tool
3. Quick Selection Tool
4. Magic Wand Tool

Rapid Fire

1. a. (ii) b. (iii) c. (iv) d. (ii) e. (i)

2. a. F b. T c. T d. T

Evaluation Time

1. a. advanced b. psd c. began d. Application

2. a. The Paint Bucket Tool in Photoshop fills adjacent pixels that are similar in color in the image. It fills with either the selected foreground color or with a pattern.

b. Rasterizing means the text will be converted into pixels, allowing you to make image adjustments that normally do not work with text layer. Rasterize is the process of converting a vector image to a raster image.

c. Layers panel contains all the layers present in the Photoshop document. Whenever you add an image into a Photoshop document, a new layer is created.

d. Layer is a transparent sheet stacked on top of each other.

3. a. Selection tools are used to select certain areas of the image to work without affecting the unselected areas. Some of the Selection tools are Rectangular Marquee Tool, Elliptical Marquee Tool and Lasso Tool.

b. Follow the below steps to use the Mixer Brush Tool:

Step 1: Open a new document and select the Mixer Brush Tool from the Tools panel.

Step 2: Select the desired brush from the Brush Presets Picker in the Options bar.

Step 3: To sample a color either you can click on the Current brush load from the Options bar and select the desired color. Or press Alt key and click from where you wish to sample color in the current image.

Step 4: Set various options in the Options bar according to your preferences. Specifying the percentages of Wet, Load, Mix and Flow effects the outcome on the canvas.

Step 5: Click and drag the mouse on image to paint.

c. Quick Selection Tool makes a selection based on the color and contrast of the same color in the image that you wish to select. It remembers all the consecutive strokes. This way you can make different selections in a single image also. Quick selection tool is used to select a bigger area to work whereas the magic wand tool is used to work with a specific area. Hence Magic wand tool is better that the quick selection tool.

d. (i) Background/foreground (ii) Horizontal Type tool (iii) Move tool

Activity Time

1. a. Gradient tool b. Color Replacement tool

2. a. Vertical text b. Gradient tool c. Color Replacement tool

d. Elliptical Marquee e. Crop tool

Do yourself.

7. More on Photoshop CC

Rapid Fire

1. a. (iii) b. (ii) c. (ii) d. (i)

2. a. F b. F c. F d. T

Evaluation Time

1. a. Background b. Info c. Red Eye d. Sharpen

2. a. Copy and Paste

b. Blur Tool makes the image hazy or softens the pixels of an image. It helps to highlight the main object in the image.

3. a. Spot Healing Brush Tool is also known as texture replacement tool because it blends the wrong or bad texture of one area in an image with the good or fine texture area of the same image. The result of the spot removal may vary depending on the complexity of the image. It can be used to remove the acne or skin blemishes and scars completely from an image.

b. Perform the below steps to draw a straight path segment:

Step 1: Create a new document in Photoshop or open an existing image.

Step 2: Select the Pen Tool to from the Tools panel and set the mode of the Pen Tool to Path from the Options bar.

Step 3: Click on a point to start the path.

Step 4: Press the Shift key and click on the next point to draw a straight path.

Step 5: To close the shape, return to the first point and click once when the small circle appears.

Activity Time

1. a. History Brush Tool b. Horizontal Type Tool

2. a. Layer Panel b. Erased Tool c. Hand Tool d. Blur Tool

e. Magic Wand Tool

Find Out

Do yourself.

In The Lab

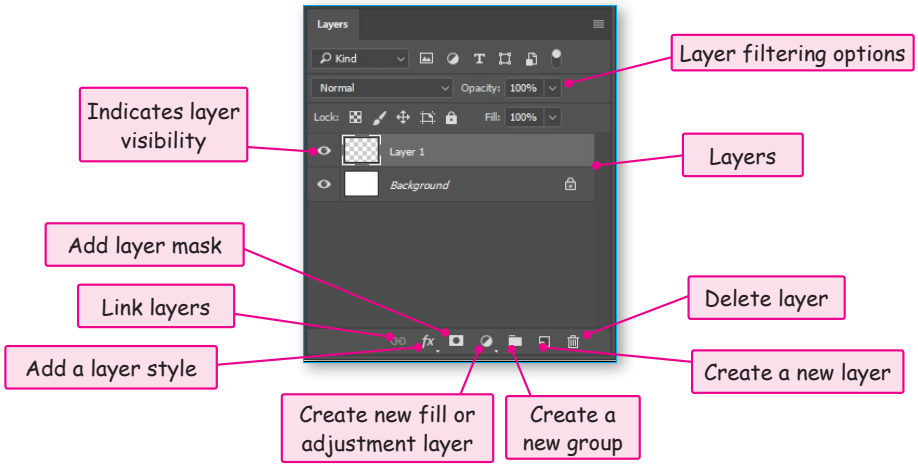
Do yourself.

Periodic Assessment–3

(Based on chapters 6 & 7)

A.
1. Vertical Text Tool
2. Gradient Tool
3. Color Replacement Tool
4. Elliptical Marquee Tool
5. Crop Tool

B.



C. 1. e. 2. d. 3. a 4. c. 5. b.

8. More on Python

Warm Up!

1. 3400 2. 6 3. 100100100100100

Warm Up!

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

Rapid Fire

1. a. (iii) b. (i) c. (iv) d. (ii) e. (iii)

2. a. F b. F c. T d. T

Evaluation Time

1. a. unary and binary b. + c. * d. indentation

2. a. Precedence is the priority to given any operator in Python.

b. Logical operators are used to assess more than one comparisons and provide True or False as the result.

c. Syntax:

if<condition>: Statement Set 1 elif<condition>: Statement set 2 else: Statement set 3

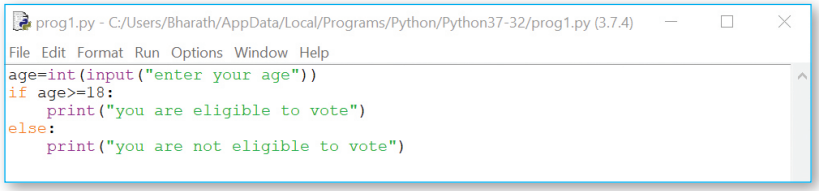
3. a. There are three types of conditional statements:

1. The if Statement: The if statement is the most basic conditional statement. It can evaluate only one condition.
2. The if...else Statement: An if...else statement provides a set of two paths, one if the condition is True and the other if the condition is False.
3. The if...elif...else Statement: A single if...else statement would not suffice in this case. Python allows to have multiple conditions in such cases.

b. Arithmetic operators are used to perform basic mathematical operations or calculations. These are (+) addition, (–) subtraction, (*) multiplication, (/) division, etc. Arithmetic operators can be divided into two categories: Unary operator and Binary operator.

c. An if...else statement provides a set of two paths, one if the condition is True and the other if the condition is False.

Example:



Activity Time

a. a. 20 b. Enter second number c. 100 d. Positive number

Do yourself.

9. Loops in Python

Hello Touchpad

Rapid Fire

1. a. (iii) b. (i) c. (i)

Evaluation Time

1. a. for, while b. in, not in c. else d. infinite

2. a. Looping refers to the process of repeating a set of statements repeatedly on the basis of a condition until the condition is falsified.

b. The syntax of for loop is
for <variable> in <iterator>:w
Statements

c. While loop is used when the number of iterations are not known to the user before running the loop. For loop is used when the number of iterations are known to the user before running the loop.

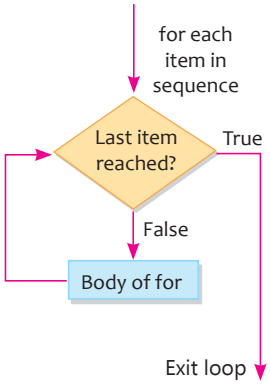
3. a. The range( ) function is used with for loop to generate a list of numbers. Let's create the previous program again by using the range( ) function.

```
for x in range (0, 9):
print (x+1)
```

b. A loop which never ends is called an infinite loop. This mostly happens when loop does not have a termination condition.

```
a=13
x=1
while x>=1:
print (x*a)
x+=1
```

c.



Activity Time

1. 55.

2. 0
1
2
0

3. apple
banana
cherry

Do yourself.

10. Robotics and AI

Rapid Fire

1. a. (i) b. (i) c. (i) d. (ii)

2. a. T b. T c. T d. F

Evaluation Time

1. a. brain b. carthy c. deep blue
d. machine learning e. robot

2. a. John McCarthy first coined the term "Artificial Intelligence" in 1956.

b. A robot designed to execute highly sophisticated instructions is referred to as an android.

c. The field of mechanics and electronics together have given rise to a new emerging sector called Mechatronics.

d. Unmanned surgery, surgery with minimum cutting or puncturing of skin has been possible because of robots.

3. a. Artificial Intelligence has advanced very rapidly in the past decade because of greater use of science, engineering and mathematics in experimenting and comparing approaches. Artificial Intelligence research also overlaps with tasks such as robotics, control systems, scheduling, data mining, logistics, speech & facial recognition, etc.

b. There are two types of robots:

(i) Industrial robots are mainly used in manufacturing industries such as automotives industries. These robots are programmed using computers.

(ii) Service robots include domestic robots that clean the carpet or cut grass in the garden and move on their own. They are fully or semi-autonomous robots and controlled by electronic circuits.

c. Robotics gained a vital place in the environmental sector. A robot developed in England can attack insects like some omnivorous plants. Also a London aquarium exhibits a robot that has been inspired by a fish.

Activity Time

WITH THE ADVANCEMENT IN TECHNOLOGY, ROBOTS HAVE BECOME SO POWERFUL THAT IN NEAR

FUTURE, THEY MAY ENSLAVE THE HUMAN RACE. TOO MUCH ADVANCEMENT MAY ALSO PROVE HARMFUL. WE MUST BE PREPARED TO FACE THE CRISIS.

Do yourself.

Periodic Assessment–4

(Based on chapters 8 to 10)

A. A. num = 407

```
if num > 1:
  # check for factors
  for i in range(2,num):
     if (num % i) == 0:
        print(num,"is not a prime number")
        print(i,"times",num//i,"is",num)
        break
  else:
     print(num,"is a prime number")
# if input number is less than
# or equal to 1, it is not prime
else:
  print(num,"is not a prime number")
```

B. Congratulations!!!

You have passed the exam

C. 1. Machine learning technology, aimed at making everyday tasks easier. This involves tasks like organizing and prioritizing emails, scheduling meetings, logging interactions, content, etc.

2. Machine vision is used to capture and analyse visual information using a camera, analog to digital conversion and digital signal processing.

3. Iron Man, Star Wars, RoboCop or Transformers. These movies have phenomenal special effects, art work and animation which demonstrate the capabilities of computers and also the technological advancements of the robotics industry in the world.

4. The field of mechanics and electronics together have given rise to a new emerging sector called Mechatronics.

Test Sheet–2

(Based on chapters 6 to 10)

1. a. (i) b. (iii) c. (iii) d. (ii) e. (iii)
f. (i) g. (i) h. (i) i. (ii)

2. a. psd b. Info c. +, * d. for, infinite
e. brain f. Integrated circuit

3. a. F b. F c. F d. T
e. F f. T g. F

4. a. The Paint Bucket Tool in Photoshop fills adjacent pixels that are similar in color in the image. It fills with either the selected foreground color or with a pattern.

b. Blur Tool makes the image hazy or softens the pixels of an image. It helps to highlight the main object in the image.

c. Precedence is the priority to given any operator in Python.

d. Looping refers to the process of repeating a set of statements repeatedly on the basis of a condition until the condition is falsified.

e. Artificial Intelligence is a technique that enables computers and machines to mimic human intelligence using logic, if-then rules, decision trees, and machine learning.

5. a. Selection tools are used to select certain areas of the image to work without affecting the unselected areas. Some of the Selection tools are Rectangular Marquee Tool, Elliptical Marquee Tool and Lasso Tool

b. Perform the below steps to draw a straight path segment:

Step 1: Create a new document in Photoshop or open an existing image.

Step 2: Select the Pen Tool to from the Tools panel and set the mode of the Pen Tool to Path from the Options bar.

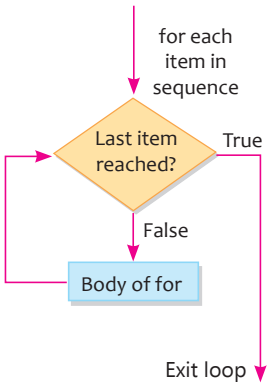
Step 3: Click on a point to start the path.

c. There are three types of conditional statements:

1. The if Statement: The if statement is the most basic conditional statement. It can evaluate only one condition.
2. The if...else Statement: An if...else statement provides a set of two paths, one if the condition is True and the other if the condition is False.
3. The if...elif...else Statement: A single if...else statement would not suffice in this case. Python allows to have multiple conditions in such cases.

d. a. 20

e.



f. Robotics Vehicles

Speech recognition

Game playing

Autonomous planning and scheduling

Logistics planning

Machine translation