Class 8

ANSWER KEY

PLUS Ver 4.0

1. Computer Networking

Take Off (Page no. 11)

Do it yourself.

Double Tap (Page no. 14)

1. Client 2. Internet 3. Web portal

Double Tap (Page no. 20)

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

Double Tap (Page no. 22)

1. Hyper Text Transfer Protocol Secure
2. Internet Message Access Protocol
3. File Transfer Protocol
4. Transmission Control Protocol/Internet Protocol

Choose the correct option.

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

Tick (✓) the correct statements and cross (×) the wrong ones.

1. × 2. ✓ 3. ✓ 4. ✓ 5. ✓

Answer the following questions:

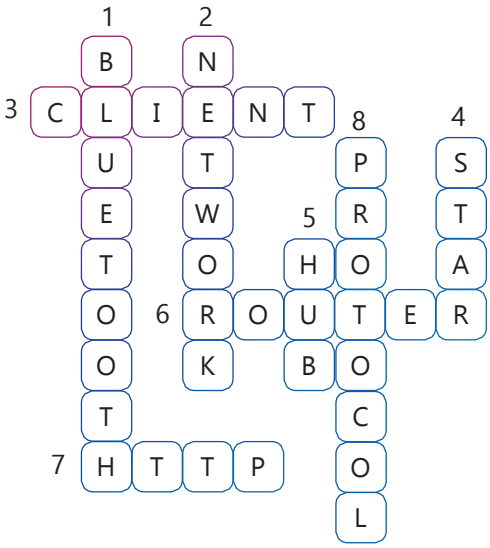
1. Protocol is a set of rules that governs the communication between the computers on a network. Certain network protocols and standards are to be followed in order to ensure that your computer can communicate with another computer over a network.
2. Client is a computer which depends on the server for all the resources.

   A server is also called host computer. It controls the access to the hardware and software on the network.
3. Topology refers to the geometric arrangement of computers or nodes in a network.
4. Gateway is a network device that allows to data to flow between two different networks which may use different protocols.
5. A computer network is a group of interconnected computer systems and other computing devices.

   It reduces the cost of hardware.

Scratch Your Brain.

1.



2. Do it yourself
3. Competency-based/Application-based questions:

   a. Ring Topology.

   b. Network Server.

2. Krita—Image Editing

Take Off (Page no. 27)

Do it yourself.

Double Tap (Page no. 36)

1. Polygonal Selection Tool
2. Contiguous Selection Tool
3. Rectangular Selection Tool

Choose the correct option.

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

Fill in the blanks with the correct words.

1. Freehand Selection 2. Workspace 3. SVG Text 4. Clone

Answer the following questions:

1. Elliptical Selection Tool is used to select an oval or circular portion of an image.
2. It displays different options and properties that are available for the selected tool.
3. (The question was printed incorrectly in the book, please correct it in your textbook)

   Question.

   Differentiate between the Freehand Selection Tool and Rectangular Selection Tool.

   Ans.

   Freehand Selection Tool is used to select an object or section of an image by drawing a freehand border around it.

   Rectangular Selection Tool is used to select a rectangular portion of an image.

Scratch Your Brain.

1. a. Crop Tool

   b. Freehand Brush Tool

   c. Polygon Tool

d. Rectangle Tool

e. Smart Patch Tool

2. Competency-based/Application-based questions:

a. He can use Crop Tool in Krita.

b. She can use Clone Tool.

3. Trending Technologies

Take Off (Page no. 41)

Do it yourself.

Double Tap (Page no. 44)

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

Choose the correct option.

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

Tick (✓) the correct statements and cross (×) the wrong ones.

1. ✓ 2. × 3. × 4. ✓ 5. ✓ 6. ✓

Answer the following questions:

1. Robotics is a branch of engineering that uses technologies such as Artificial Intelligence and Machine Learning. It deals with the design, construction, operation, and application of robots. Robots are nowadays used to build cars, manufacture and pack items, perform surgeries.
2. Sophia is considered the most advanced humanoid robot. It is the world's first robot citizen.

   Aibo is a robotic dog. It can develop emotional bonds with family members and provide love and affection.

   Pepper is a friendly humanoid designed to be a companion in home and help customers at retail stores.

3. Augmented Reality is a technology that superimposes sounds, images and text on the real world that we can see. Images are created by developers within applications that blend in with content in the real world. For Example, Snapchat, Pokemon Go. Virtual Reality is a technology that creates a complete virtual world that users can interact with. In this world, you can experience places as if you were actually there. While using virtual reality, the user almost always wears VR devices such as HTC Vive or Google Cardboard.
4. 3D Printing or 3-Dimensional Printing is a process of making a physical object from a threedimensional physical model. The object can be made using a number of printing materials, including plastics, powders, filaments, paper or even human tissue. Tvasta is India's first 3d printed house which was created in 2020, in Chennai.

Scratch Your Brain.

1. Do it yourself.
2. Do it yourself.
3. a. Ameca robot's movements are more lifelike than other robots. Companies creating AI or machine learning technology can use Ameca to test and present their technology in front of a live audience.
   b. Sophia is considered the most advanced humanoid robot. It is the world's first robot citizen.
   c. Aibo is a robotic dog. It can develop emotional bonds with family members and provide love and affection.
   d. Nao is a small humanoid robot, packed with sensors. It can walk, dance, speak, and recognize faces and objects.
4. Competency-based/Application-based questions:
   a. AI
   b. 3D Printing

Periodic Assessment–1

(Based on chapters 1 to 3)

A. Identify the type of topology.

1. Ring Topology 2. Mesh Topology 3. Bus Topology 4. Star Topology

B. Match the following tools with their names:

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

C. Write the full form of the following abbreviations: Also, write the line about these technologies.

1. Augmented Reality, it 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.

2. Virtual Reality is a technology that creates a complete virtual world that users can interact with. In this world, you can experience places as if you were actually there. While using virtual reality, the user almost always wears VR devices such as HTC Vive or Google Cardboard.
3. Robotic Process Automation allows organizations to automate tasks which human beings were doing across any applications and systems. The purpose of RPA is to transfer the execution of the process from humans to robots.
4. Internet of Things (IoT), It is a system of connected computing devices, mechanical and digital machines for creating a virtual network where a monitoring center ensures that everything is working smoothly.

4. Images, Links & Frames in HTML5

(Page no. 53)

1.
 stands for "break".
2. <p> stands for "paragraph".
3. stands for "unordered list".
4. stands for "list item".
5. <tr> stands for "table row".
6. <td> stands for "table data".

(Page no. 54)

Src, Width, Height

(Page no. 64)

1. A website is a collection of web pages which are interlinked with each other and contains related information. These web pages are linked with the help of a feature of HTML called hyperlink.
2. <A HREF = "URL of Web Page" TARGET="_blank"> Link Text </A>
3. a:active and a:link

Choose the correct option.

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

Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓ 2. ✗ 3. ✗ 4. ✗

5. ✓

Answer the following questions:

1. HREF stands for Hypertext Reference.
2. ALINK attribute is used to set the style for an unvisited link.
3. HTML provides a feature to display more than one web pages on a single screen of the web browser. These web pages are actually displayed using frames. Frames are the different sections or parts of a web page. The <IFRAME> tag of HTML allows you to divide a browser window into many sections or parts.
4. BORDER attribute specifies the thickness of the border surrounding the image.

Scratch Your Brain.

1. Do it yourself.
2. a. <VIDEO SRC = "D:\Song.mp4" LENGTH = "300" HEIGHT = "300" AUTOPLAY CONTROLS> </VIDEO>

   b. <IMG SRC="home.jpg" WIDTH="200px" BORDER="2">

   c. <STYLE>

   body{background:yellow}

   h1{align:center; text:red}

   </STYLE>

3. Competency-based/Application-based questions:

   a. He can use <IFAME> tag.
   b. She can use <IMG> tag.
   c. She can use <A> tag attribute HREF.

5. Forms in HTML5

Take Off (Page no. 72)

1. HREF, TARGET
2. Lists, Tables
3. font-size, font-family
4. Align, Border

Double Tap (Page no. 73)

1. <Form> ... Form element.. </Form>
2. Action and Method

Choose the correct option.

1. c. 2. a. 3. a.
4. (This question was printed incorrectly in the book. Please correct it in your textbook.)
   Question: Which of the following values of TYPE attribute is used to create an action button control?
   a. SELECT b. TEXT
   c. BUTTON d. SUBMIT
   Ans. c.
5. c. 6. b.

Tick (✓) the correct statements and cross (×) the wrong ones.

1. × 2. ✓ 3. × 4. ✓ 5. ×

Answer the following questions:

1. HTML5 form is an interface of a web page that enables the user to enter data (such as names, e-mail address, passwords, phone numbers, etc.) that is to be sent to the server for further processing.
2. To display multiple options in the form of a drop-down menu or list from which we can select only one option at a time. This type of control is known as combo box.

3. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Question. What is the difference between the <Datalist> and <Select> elements?

Ans. The <datalist> element allows the user to add the input as he wishes, whereas the user has the option to select an input from the provided list when using the <select> element.

The <SELECT> tag is used to add a drop-down list in the form. This tag produces a list of options for the user with the help of <OPTION> tag. We can create a combo box using <SELECT> and <OPTION> tags.

4. The <FORM> tag is used to create the form boundary on the web page. It is a container tag. All other form related tags are used inside the opening <FORM> and closing </FORM> tags. The <FORM> tag has three attributes, which are:

   a. ACTION: This attribute is used to specify the action that will take place when we submit the form values. It takes the URL of another web page or an e-mail address to receive the information.

   b. METHOD: It specifies the type of method form will use to accept the values entered into form fields. The most commonly used values for this attribute are POST and GET.

   c. ENCTYPE: It is used to specify that how a web browser decodes the data before sending it to the server.

Scratch Your Brain.

1. a. <INPUT TYPE="BUTTON" VALUE="Log IN">

   b. <SELECT NAME="List">
   <OPTION>Mango
   <OPTION>Orange
   <OPTION>Grapes
   </SELECT>

2. Competency-based/Application-based questions:

   a. He can add Radio button or Check Box.

   b. She can use <FORM> Tag.

Periodic Assessment–2

(Based on chapters 4 & 5)

A. Write the uses of the following HTML attributes of <IFRAME> tag:

1. Height attribute is used to specify the height of the frame.
2. Width attribute is used to specify the width of the frame.
3. Name attribute is used to specify the name of the frame. This name can be used in the TARGET attribute of the <A> tag.

B. Write the HTML code to create the following form:

Do it yourself.

Test Sheet–1

(Based on chapters 1 to 5)

A. Choose the correct option.

1. b 2. a. 3. b. 4. a. 5. a. 6. d.
7. b. 8. a. 9. c. 10. b.

B. Fill in the blanks with the correct words.

1. SVG text
2. Similar colour selection tool
3. (This question was printed incorrectly in the book please correct it in your textbook.)

   Question: _____ tag of HTML allows you to divide a browser window into many sections or parts.

   Ans. <IFAME>
4. Virtual
5. Augmented reality

C. Tick (✓) the correct statements and cross (×) the wrong ones.

1. ✓ 2. ✓ 3. ✓ 4. ✓ 5. ✓

D. Answer the following questions:

1. Topology refers to the geometric arrangement of computers or nodes in a network.
2. A computer network is a group of interconnected computer systems and other computing devices.

   Computer network reduces the cost of hardware.
3. (This question was printed incorrectly in the book, please correct it in your textbook.)

   Question: What is Eliptical Selection Tool?

   Ans. Elliptical Selection Tool is used to select an oval or circular portion of an image.
4. Rectangular Selection Tool is used to select a rectangular portion of an image.
5. 3D Printing or 3-Dimensional Printing is a process of making a physical object from a three dimensional physical model. The object can be made using a number of printing materials, including plastics, powders, filaments, paper or even human tissue.
6. Artificial Intelligence (AI) is a branch of computer science that pursues the creation of computers and machines which are as intelligent as human beings. AI machines are as smart and intelligent as the human brain and react like humans.
7. ALINK attribute is used to set the style for an unvisited link.
8. BORDER attribute specifies the thickness of the border surrounding the image.
9. The <datalist> element allows the user to add the input as he wishes, whereas the user has the option to select an input from the provided list when using the <select> element.

   The <SELECT> tag is used to add a drop-down list in the form. This tag produces a list of options for the user with the help of <OPTION> tag. We can create a combo box using <SELECT> and <OPTION> tags.
10. HTML5 form is an interface of a web page that enables the user to enter data (such as names, e-mail address, passwords, phone numbers, etc.) that is to be sent to the server for further processing.

6. Algorithmic Intelligence

Take Off (Page no. 89)

1. Do it yourself.
2. Try harder

Double Tap (Page no. 90)

TEA COFFEE TEA

Choose the correct option.

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

Answer the following questions:

1. A sequence of instructions when repeated for a fixed number of times or until a condition is true is called a loop.
2. a. AND: results in YES only if both the conditions are true. If any condition is false, the result will be false.

   OR: results in YES if any one of the conditions is true. If both are false, the result will be false.

   b. Counting loops: These repeat a certain number of times.

   Conditional loops: These repeat until a certain condition is reached which means they keep going until some condition remains true.
3. if (today is Sunday and a Cricket match)
   then
   display "Yes"
   else
   display "No"
4. if (today is Weekday and Exam)
   then
   display "Yes"
   else
   display "No"

5. if (Number is Positive)
   then
   print "Positive"
   else
   print "Negative"

Scratch Your Brain.

1. a.

Num1	4	7	87
Num2	7	5	34
Print	Num 2 is greater	Num 1 is greater	Num 1 is greater

b.

Marks	45	40	55	49	85
Result	Fail	Fail	Pass	Fail	Pass

c. Start

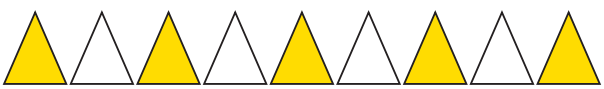
x					
	x				
		x			
			x		
				x	
					x

d.

	8	8	8	8	8

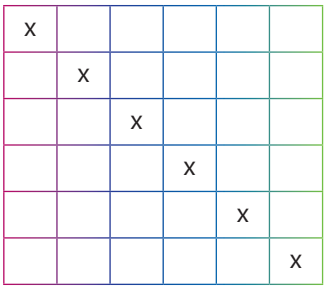
Start

2. a.



start

b. Start



3. Competency-based/Application-based questions:

a. He can use Loop to use the code.

b. If ((year % 4 = 0) and year % 100! = 0)) or (year % 400 = 0)
then
display 'Yes'
else
display 'No'

7. Loops in Python

Take Off (Page no. 97)

1. False 2. True 3. True

Double Tap (Page no. 101)

1. The syntax of the for statement is given below:
for <variable> in <iterator>:
Statements
2. The syntax of while loop is given below:
while (test expression):
Statements
3. a. -10
-9
-8
-7
-6

-5
-4
-3
-2
-1

b. Orange Education
Orange Education
Orange Education
Orange Education
Orange Education

Double Tap (Page no. 103)

1. Hello Touchpad
   An infinite loop is created with the above message.
2. i= 1
   Done
   i= 2
   Done
   i= 3
   Done
   i= 4
   Done
   i= 5
   Done

Choose the correct option.

1. b
2. (This question was printed incorrectly in the book, please correct it in your textbook.)
   Question: Which of the following is/are a looping statement in Python?
   a. for statement
   b. while statement
   c. Both a. and b.
   d. break statement
   Ans. c.

3. (This question was printed incorrectly in the book, please correct it in your textbook.)

Question: Which of the following statements allow/allows to repeat a task for a fixed number of times?

a. for statement
b. if statement
c. Both a. and b.
d. continue statement

Ans. a.

4. c

Fill in the blanks with the correct words.

1. while
2. non-zero, false
3. Infinite
4. break, continue

Tick (✓) the correct statements and cross (✗) the wrong ones.

1. (This question was printed incorrectly in the book, please correct it in your textbook.)

Question: The break statement is used inside the if statement.

Ans. ✓

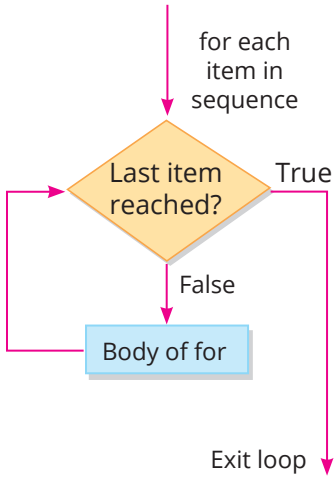
2. ✗
3. ✓
4. ✓
5. ✓

Answer the following questions:

1. The statements that are used to repeat a set of instructions are called iterative or looping statements.
2. The syntax of the for statement is given below:

```
for <variable> in <iterator>:
    Statements
```

3. Python offers two jumping statements—break and continue, which are used within the loop.
4. The flowchart of the for loop is given below:

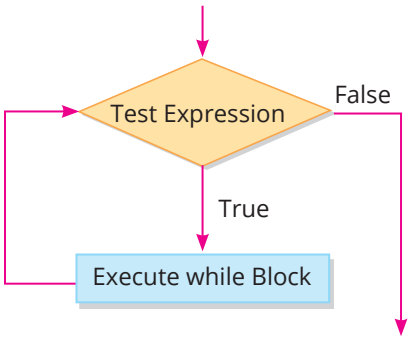


5. The while statement executes a set of statements repeatedly, until the logical expression evaluates to true. When the condition becomes false, the control comes out of the loop. The syntax of while statement is given below.

   Syntax:

   while (test expression):

   Statements



6. The break is a keyword in Python which is used for bringing the program control out of the loop whereas the continue statement is used inside loops.

Scratch Your Brain.

1. a. 55

   b. apple
   banana
   cherry

   c. 2
   4

   d. 0
   0
   1
   0
   2

   e. 0
   1
   2
   0

2. Competency-based/Application-based questions:

a. She can use The While Statement.

Syntax:

while (test expression):

Statements

b. He can use The Continue Statement.

8. Functions and String in Python

Take Off (Page no. 110)

```
sum = 0
i = 1
while(i<6):
    sum += i
    i += 1
print("The sum of the first five natural numbers is: ", sum)
```

Double Tap (Page no. 113)

1. Arguments, Statements
2. The main difference between these two categories is that built-in functions do not require to be written by us, whereas a user-defined function has to be developed by the user at the time of writing a program.

Double Tap (Page no. 117)

1. A sequence of characters which is enclosed or surrounded by single (' ') or double (" ") quotes is known as a string.
2. An escape sequence is a sequence of characters that does not represent itself when used inside a character or string. It is typically used to specify actions such as carriage returns and tab movements.

Choose the correct option.

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

Fill in the blanks with the correct words.

1. append 2. Function 3. lower 4. string

Answer the following questions:

1. A function can be defined as a block of a reusable code that performs a specific task. Functions help us to break our program into smaller pieces or modules.
2. A sequence of characters which is enclosed or surrounded by single (' ') or double ("") quotes is known as a string. The sequence may include a letter, number, special characters or a backslash. Python treats single quotes as double quotes.
3. A function can be called anytime from other functions or from the command prompt after the definition. For calling a function, we type the function and pass the parameters. For example:

   To call a function

4. Built-In Functions: The print() and input() belong to the category of built-in functions. We also have other built-in functions like range(), type(), etc. The main difference between these two categories is that built-in functions do not require to be written by us whereas a user-defined function has to be developed by the user at the time of writing a program.

   User-Defined Functions: User-defined functions are created by the user according to the need of the program. Once the user defines a function, the user can call it in the same way as the built-in functions. User-defined functions are divided into various categories based on the parameters and return type.
5. Two built-in functions to manipulate strings:

   i. **len():** The len() function calculates and returns the length of a string supplied as an argument.

   Syntax of using len() function is:

   len(string_name)

   ii. **lower():** The lower() function converts all uppercase letters to lowercase. Syntax of using lower() function is:

   string_name.lower()

Scratch Your Brain.

1. a. (This question was printed incorrectly in the book, please correct it in your textbook.)

   Question:

   test_str = "Good Morning"

   print("The original string is : " + str(test_str))

```
hlf_idx = len(test_str)
res = ' '
for idx in range(len(test_str)):
    if idx >= hlf_idx:
        res+= test_str[idx].upper()
    else:
        res+= test_str[idx].upper()
print("The resultant string : " + str(res))
```

Ans.

```
The original string is : Good Morning
The resultant string :  GOOD MORNING
```

b. (This question was printed incorrectly in the book, please correct it in your textbook.)

Question:

```
str ="Hello, how are you?"
print('str = ', str)
print('str[0] = ', str[0])
print('str[-1] = ', str[-1])
print('str[1:5] = ', str[1:5])
print('str[5:-2] ', str[5:-2])
```

Ans.

```
str =  Hello, how are you?
str[0] =  H
str[-1] =  ?
str[1:5] =  ello
str[5:-2] =  , how are yo
```

2. a.
```
def evenodd(a):
    if (a % 2 == 0):
        print("even")
    else:
        print("odd")
    #calling the function
evenodd(2)
evenodd(3)
```

b.
```
def rev_sentence(sentence):
    words = sentence.split(' ')
    reverse_sentence = ' '.join(reversed(words))
    return reverse_sentence
```

```
if __name__ == "__main__":
    input = "Today is Sunday"
    print (rev_sentence(input))
```

3. Competency-based/Application-based questions:

a. He can change it by using upper() function.

b. It is possible by using escape sequences with strings.

Periodic Assessment–3

(Based on chapters 6 to 8)

A. Write the algorithm to paint the boxes to make letter(X).

Start

X				X
	X		X	
		X		
	X		X	
X				X

End

```
Put a cross
Repeat 4 times
(
Move 1 step right
Move 1 step down
Put a cross
)
Repeat 4 times
(
Move 1 step up
}
Put a cross
Repeat 4 times
(
Move 1 step left
Move 1 step down
Put a cross
)
```

B. Factorial of a number means that the given number is multiplied by all the numbers preceding up to that number. For example,

5! = 5 x 4 x 3 x 2 x 1 = 120

Write a program in python to determine the factorial of a given number.

```
num = int(input("Enter a number: "))
factorial = 1
if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
```

```
    print("The factorial of 0 is 1")
else:
for i in range(1,num + 1):
    factorial = factorial*i
print("The factorial of",num,"is",factorial)
```

C. Question:

```
#Program to display the sum of the following series up to 100
# 10, 15, 20, 25, 30, ..... 100
```

Ans.

```
sum = 0
a = 10
while (a <= 100):
    sum += a
    a += 5
print('The sum of sum of the series 10, 15, 20 up to 100 is', sum)
```

9. List in Python

Take Off (Page no. 124)

1. "Name"
2. 'Delhi'
3. 123
4. 23234.54
5. "22323.11"
6. '*&%$#'

Double Tap (Page no. 130)

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

Choose the correct option.

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

Fill in the blanks with the correct words.

1. heterogeneous
2. item
3. indexing
4. mutable
5. +

Tick (✓) the correct statements and cross (×) the wrong ones.

1. ✓ 2. × 3. ✓ 4. × 5. ✓

Answer the following questions:

1. A list is a sequence of multiple values in a sequence. In a list, each element or value is called an item. List is mutable, which means the items in a list can be modified by assigning new values.
2. The index of elements of a list starts from 0; which means if a list contains 10 elements then its index (it is always an integer number) is from 0 to 9.
3. Negative indexing means the index of -1 refers to the last elements of the list, the index of -2 refers to the second last element.
4. The index of elements of a list starts from 0; which means if a list contains 10 elements then its index (it is always an integer number) is from 0 to 9, whereas Negative indexing means the index of -1 refers to the last elements of the list, the index of -2 refers to the second last element and List slicing refers to a part of list. In python list slicing is done by using the Slicing operator(:).
5. list=[13,25,41,63,82]
   list.extend([12,2,34,65])
   print(list)
6. max(list): Returns the largest element from the given list
   min(list): Returns the smallest element from the given list

Scratch Your Brain.

1. a. [13, 50, 41, 45, 82]
   b. [13, 25, 41, 63, 82, 19]
   c. [13, 302, 25, 41, 63, 82]
   d. 5, 64, 13
   e. 82
2. a. new_list = ['a','b','c','d','e']
      print(new_list[-1])
      print(new_list,[-5])
   b. my_list = ['o','r','a','n','g','e'];
      print(my_list[2:5])
      print(my_list[5:])
      print(my_list[::])
3. Competency-based/Application-based questions:
   a. She can use operator (=) to change the elements of a list.
   b. He can use remove() to remove the items and to add some more he can use append( ).

10. Domains of AI

Take Off (Page no. 142)

1. TELEVISION
2. INTELLIGENCE

Double Tap (Page no. 144)

1. Natural Language Processing (NLP)
2. Computer Vision (CV)

Choose the correct option.

1. c. 2. a. 3. b.

Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓
2. (This question was printed incorrectly in the book, please correct it in your textbook.)
   Question: Drones can use computer vision to examine the health of crop.
   Ans. ✓
3. ✓ 4. ✓

Answer the following questions:

1. Big Data allows AI systems to train on live data and provide valuable information.
2. This is a subfield of AI which helps in communication between human and computer in natural language. It enables a computer to read and understand data by mimicking human natural language.
3. Applications of computer vision are:
   a. Self-driving cars use computer vision to examine their surroundings and plan its path.
   b. Drones can use computer vision to examine the health of crops and alert the farmers of the crop's condition.
4. Computer Vision is a very popular field of AI that trains a computer to understand and interpret the visual world.

5. Two real life usages of NLP are:
   a. NLP checks the sender of the email and categorises the mails as spam or junk.
   b. NLP also finds its use in the auto complete and spell check feature of word processors.

Scratch Your Brain.

1. (This question was printed incorrectly in the book, please correct it in your textbook.)
   Question: How many 4s are there in the following number series that are preceded by 5 but not followed by 7?
   2 3 4 2 3 4 2 5 4 7 3 2 4 3 1 9 2 5 4 7 5 4 7 2 3 4 5 2 9 5 4 6
   (A) One (B) Three
   (C) Four (D) Five
   Ans. (A) One
2. c.
3. Do it yourself.
4. Competency-based/Application-based questions:
   a. The device is based on Computer Vision (CV).
   b. The reason behind it was Applications of Natural Language Processing.

11. Future of AI

Take Off (Page no. 149)

1. Natural Language Processing (NLP)
2. Computer Vision (CV)
3. Big Data

Double Tap (Page no. 150)

CCTV based monitoring using AI can help in building surveillance systems to keep a check on potential criminal incidents and security of the residents.

Double Tap (Page no. 152)

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

Choose the correct option.

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

Fill in the blanks with the correct words.

(This question was printed incorrectly in the book. Please correct it in your textbook.)

Question: Hints: CCTV, homes, Military, traffic, Google

1. _____ began testing a self-driving car in 2012.
2. AI can revolutionize the way _____ can be controlled and managed in cities.
3. AI enabled _____ will let us turn on our lights, play favourite music or change our room temperature, at the tap of our smartphones.
4. _____ based monitoring using AI can help in building surveillance systems to keep a check on potential criminal incidents and security of the residents.
5. AI-assisted _____ technology has built an autonomous weapon system.

Ans.

1. Google 2. traffic 3. homes 4. CCTV 5. Military

Answer the following questions:

1. Traffic Management
2. These roads also have a smart system which gives alerts on traffic and medical information in case of medical emergencies and requirements.
3. Automated Transportation
4. AI has a great potential to boost an individual's economic health. Nowadays, AI algorithms are being used to manage equity funds.
5. In future, AI will have a huge impact on automated transport. Automated transportation will ensure that there are fewer accidents. Google began testing a self-driving car in 2012. Many other automobile manufacturers like General Motors, Ford, Mercedes, BMW, etc. are in the process of developing driverless car systems.
6. AI can revolutionize the way traffic can be controlled and managed in cities. Congestion can be reduced by route selection, predictive alerts, and route deviation.

Scratch Your Brain.

1. Do it yourself.
2. Competency-based/Application-based questions:
   a. CCTV based monitoring using AI can be used for safety.
   b. He is referring to AI-assisted Military technology.

Periodic Assessment–4

(Based on chapters 9 & 11)

A. Write a short note on the following:

1. AI's ability to work so well with data analytics is because of its use of Big data. Without making its presence known, Big data has already been everywhere. Big data has become a valuable commodity. It can be defined as massive amount of stored data which when analysed properly could reveal valuable insights into industry to which the data belongs.
2. Computer Vision is a very popular field of AI that trains a computer to understand and interpret the visual world. Human vision starts at the "eyes" but machine uses digital images from a camera for vision. Deep learning models and machines accurately identify and classify objects that act according to what they see, using digital images from camera.

B. What will be the output of the following code:

[15, 20, 25, 30]

C. Match the following:

1. a 2. c. 3. b

Test Sheet–2

(Based on chapters 6 to 11)

A. Choose the correct option.

1. b.	2. c.	3. c.	4. c.	5. a.
6. c.	7. b.	8. a.	9. c.	10. a.

B. Fill in the blanks.

1. While	2. non-zero	3. append	4. Function	5. heterogenous
6. item				

C. Tick (✓) the correct statements and cross (×) the wrong ones.

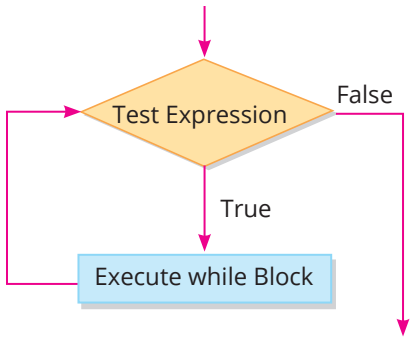
1. ×	2. ×	3. ✓	4. ×	5. ✓	6. ✓

D. Answer the following questions:

1. if (today is Sunday and a Cricket match)
   then
   display "Yes"
   else
   display "No"
2. The while statement executes a set of statements repeatedly, until the logical expression evaluates to true. When the condition becomes false, the control comes out of the loop. The syntax of while statement is given below.

   Syntax:

   while (test expression):
   Statements



3. The syntax of the for statement is given below:

   for <variable> in <iterator>:

   Statements

4. Built-In Functions: The print() and input() belong to the category of built-in functions. We also have other built-in functions like range(), type(), etc. The main difference between these two categories is that built-in functions do not require to be written by us whereas a user-defined function has to be developed by the user at the time of writing a program.

   User-Defined Functions: User-defined functions are created by the user according to the need of the program. Once the user defines a function, the user can call it in the same way as the built-in functions. User-defined functions are divided into various categories based on the parameters and return type.

5. In case if the user tries to access an element from a list beyond the defined range of the list, then it will give an IndexError.
6. Traffic Management
7. These roads also have a smart system which gives alerts on traffic and medical information in case of medical emergencies and requirements.
8. AI can revolutionize the way traffic can be controlled and managed in cities. Congestion can be reduced by route selection, predictive alerts, and route deviation.