

## **Lesson – 8 Understanding A.I**

1Ans. Artificial Intelligence refers to the recreation of human intelligence in machines. It is an area of computer science where machines are designed to have human-like intelligence.

2Ans. Artificial Intelligence makes our life easier. It helps in minimizing human efforts as the machines that are based on AI are automated. Such machines speed up the tasks and processes with much accuracy and precision, thereby increasing the overall productivity.

Do not Write 3 & 4 questions

5Ans. Neural networks, robotics, speech processing, Natural Language Processing, Machine Learning Image Recognition are various subfields of AI.

6Ans. a. Google Home is a smart device because it can control over 50,000 smart devices like lights, TV, appliances, etc. when added to the Google Home app.

b. Spotify is a smart app because it suggests songs based on the user's playlist.

c. Face ID feature in your mobile is also a smart device because it distinguishes between your face and others face' based on your features.

d. CCTV camera is not a smart device as it only records videos.

e. Social media apps are smart apps as they show advertisements, feed and people you may know based on the user's search and contacts.

f. Self-driving cars are smart devices because it uses a combination of sensors, cameras, radar and artificial intelligence (AI) to travel between destinations without a human driver.

g. Motion sensor lights are not smart device because they only detect motion and work on it.

h. Playing chess vs Computer is smart because the computer learns from your moves and plays accordingly.

## **Lesson -7 INTRODUCTION TO PYTHON**

1Ans. Following are the rules we must remember while giving a name to the variable:

- a. A variable name can only start with an alphabet.
- b. A variable name can contain numbers but not at the first position.
- c. A variable name allows only one special character called underscore ‘\_’, which can come at the first position.
- d. No spaces are allowed in a variable name.
- e. A variable cannot be a keyword, which already has a predefined meaning in the program.
- f. Since Python is a case sensitive language so variable “One” is different from “one”.

2Ans. Tokens are the smallest unit and the basic building block of any programming language.

Following are the different types of tokens in Python:

### **a. Identifiers**

A program not only requires printing of messages but also needs data to work on. For example, storing name as well as percentage of a child or finding sum of given numbers and so on. Thus, to store the data in a program, we need identifiers. They identify the name of the memory location where the data is stored. And that name is called a variable.

### **b. Data Types**

In Python, the values can be directly stored in the variables. There is no explicit declaration of the variable and therefore the data type is implicitly assigned to the variable on the basis of the value it contains.

3Ans. / It is used to divide the values in variables. The result is in decimal value. Whereas // It is called floor division. It is used to divide the two numbers, but the result is the quotient.

4Ans. The print function is used to print the “message” or a “value” of a variable. A message can be enclosed within a single quote or double quotes.

For example:

```
>>>print("Good Day")
```

Output: Good Day

To accept the value in a variable during the execution of our program, we use input ( ) function.

We can specify the type of value we wish to accept. The default value accepted is in the form of the string.

5Ans. int() function is used to accept a value as integer, while float() function is used to accept a value as floating point data. Refer Fig. 7.28-7.30.

6Ans. When we don't want a particular part of the program to get executed or we want to mention the details of a command for our references then we use comments. There are two types of comment allowed in Python:

a. Single Line Comment: Which is specified using '#'. Anything written after '#' will not be executed.

b. Multi Line Comment: This is specified within opening and closing triple single quotes.

### **Lab Bot Questions**

1. Write a Python script to accept two numbers A and B and find the sum, difference and product. Display the results with appropriate messages.

```
A=int(input("Enter a number"))
B=int(input("Enter a number"))
print("Sum : ",A+B)
print("Difference : ",A-B)
print("product : ",A*B)
```

2. Write a Python script to accept the length and breadth of a rectangle. Find the area and perimeter and display the result with an appropriate message.

```
L=int(input("Enter Length of rectangle"))
B=int(input("Enter breadth of rectangle"))
print("Area :",L*B)
print("Perimeter :",2*(L+B))
```

3. Write a Python script to accept three numbers. Find and display their average with an appropriate message.

```
A=int(input("Enter first number"))
B=int(input("Enter second number"))
C=int(input("Enter third number"))
Avg=(A+B+C)/3
print("Average : ",Avg)
```

4. Write a Python script to accept a number N and its Power M. Find and display  $N^M$  (Hint: Use exponentiation operator).

```
N=int(input("Enter first number"))
M=int(input("Enter second number"))
print(N**M)
```

5. Write a Python script to accept your first and last name and print them together with a message as shown in the example. If First name is "Benny" and last name is "Roy", then the output should be "Have a Good Day Benny Roy".

```
F=input("Enter first Name")
L=input("Enter last Name")
print("Have a Good Day,F,L")
```