NAAHAR PUBLIC SCHOOL (CBSE) SENIOR SECONDARY, VILLUPURAM
ACADEMIC YEAR (2022-2023)
HALF-YEARLY EXAMINATION

CLASS: XI **(ANSWER KEY)** **MARKS: 70**
SUB: INFORMATICS PRACTICES(065) **DUR: 3 Hrs**
SUB TEACHER: Mrs.DHIVYA.N **DATE:**

I. MCQ 20 X 1 =20

1. What will be the output of the following Python code?

```
i=0
while i<3:
    print(i)
    i +=1
else:
    print(0)
```

a) 0 1 2 3 0
b) 0 1 2 0
c) 0 1 2
d)error

2. Which of the following commands will create a list?
a) list1 = list()
b) list1 = []
c) list1 = list([1, 2, 3])
d) all of the mentioned

3. Suppose list1 is [2445,133,12454,123], what is max(list1)?
a) 2445
b) 133
c) 12454
d)123

4. Suppose list1 is [1, 5, 9], what is sum(list1)?
a) 1
b) 9
c) 15
d) Error

5. Suppose list1 is [2, 33, 222, 14, 25], What is list1[-1]?
a) Error
b) None
c) 25
d) 2

6. Which of the following is a Python tuple?
a) [1, 2, 3]
b) (1, 2, 3)
c) {1, 2, 3}
d) {}

7. What will be the output of the following Python code?

```
>>>t=(1,2,4,3)
>>>t[1:3]
```

a) (1, 2)
b) (1, 2, 4)
c) (2, 4)
d) (2, 4, 3)

8. What will be the output of the following Python code?

```
>>> a=(1,2,(4,5))
>>> b=(1,2,(3,4))
>>> a<b
```

a) False
b) True
c) Error, < operator is not valid for tuples
d) Error, < operator is valid for tuples but not if there are sub-tuples

9. What will be the output of the following Python code?

```
>>> a=(1,2,3,4)
>>>del(a[2])
```

a) Now, a=(1,2,4)
b) Now, a=(1,3,4)
c) Now a=(3,4)
d) Error as tuple is immutable

10. Is the following Python code valid?

```
>>> a=(1,2,3,4)
>>>del a
```

a) No because tuple is immutable
b) Yes, first element in the tuple is deleted
c) Yes, the entire tuple is deleted
d) No, invalid syntax for del method

11. What will be the output of the following Python function?

```
sum(2,4,6)
sum([1,2,3])
```

a) Error, 6
b) 12, Error
c) 12, 6
d) Error, Error

56. What will be the output of the following Python function?

```
complex(1,2)
```

a) Error
b) 1
c) 2j
d) 1+2j

12. The function divmod(a,b), where both 'a' and 'b' are integers is evaluated as:
a) (a%b, a//b)
b) (a//b, a%b)
c) (a//b, a*b)
d) (a/b, a%b)

13. Which of the following functions accepts only integers as arguments?
a) ord()
b) min()
c) chr()
d) any()

14. What will be the output of the following Python function?

```
hex(15)
```

a) f
b) 0xF
c) 0Xf
d) 0xf

15. What will be the output of the following Python function?

```
len(["hello",2,4,6])
```

a) 4
b) 3
c) Error
d) 6

16. Study the following function:
round(4.576)
What will be the output of this function?

a. 4
b. 5
c. 576
d. 5

17. Bitwise _____ gives 1 if either of the bits is 1 and 0 when both of the bits are 1.
    a) OR
    b) AND
    c) XOR
    d) NOT

18. What will be the value of the following Python expression?

```
4+2**5//10
```

a) 3
b) 7
c) 77
d) 0

19. Which of these in not a core data type?
    a) Lists
    b) Dictionary
    c) Tuples
    d) Class

20. When the given code is executed how many times ' 'you are learning python ' ' will be printed.

```
a = 0
while a<10:
… print("you are learning python")
… pass
```

a. 9
b. 10
C. 11
D - Infinite number of times

II. VERY SHORT ANSWER 15 X 1 = 15

21. **What are the two basic modes available for writing a program in Python IDLE?**

Interactive Mode: Write a few lines of code and display the output
Script Mode: Write large programs and allows to save the program for future use

22. **What is token?**

Ans.: The smallest units of a program are known as a token.

23. **What is the use of None in Python?**

Ans.: None is a special literal used in python. It means there is no value stored in an identifier. In other words, None means the that value is not assigned to the identifier.

Write the corresponding Python assignment statements:

24. **Assign the average of values of variables length and breadth to a variable sum.**

```
sum = (length + breadth) / 2
```

25. **Assign the strings 'Mohandas', 'Karamchand', and 'Gandhi' to variables first, middle and last.**

```
first = 'Mohandas'
middle = 'Karamchand'
last = 'Gandhi'
```

26. **Assign the concatenated value of string variables first, middle and last to variable fullname. Make sure to incorporate blank spaces appropriately between different parts of names.**

```
fullname = first + " " + middle + " " + last
```

Give the output of the following when num1 = 4, num2 =3, num3 = 2

27. **num1 += num2 + num3**
    print (num1)

The output is 9. This statement is having a shorthand operator +=. The execution of this statement is as following:

```
num1 = num1 + num2 + num3
num1 = 4 + 3 + 2 = 9
```

28. **num1 = int('3.14')**
print (num1)

Error in statement. Invalid Literal as it cannot be passed string to int function. In place of int, float is required. The correct statement will be:
num1=int(float('3.14'))
The output will be 3.

29. **Write a program to repeat the string "GOOD MORNING" n times. Here n is an integer entered by the user.**

```
n = int(input("Enter value to repeat /'Good Morning/'"))
for i in range(n):
print("Good Morning")
```

30. **Find the output of the following program segments:**
a) for i in range(20,30,2):
print(i)

The output will be:
20
22
24
26
28

31. ___SAAS_____ : involves the licensure of a software application to customers. Licenses are typically provided through a pay-as-you-go model or on-demand.
32. _____IAAS_____involves a method for delivering everything from operating systems to servers and storage through IP-based connectivity as part of an on-demand service.
33. In which service user can install and execute an application without worrying about the underlying infrastructure and their setup.?PAAS
34. Which mission is a robotic space mission to study about the planet Mars? ROVER
35. __AR___adds digital elements to a live view often by using the camera on a smartphone.

III. SHORT ANSWER (any 10) 10 X 2 =20

36. What factors guide the choice of identifiers in program?

Ans: (i) An identifier must start with a letter or underscore followed by any number of digits and/or letters.
(ii) No reserved word or standard identifier should be used.
(iii) No special character (Other than underscore) should be included in the identifier.

37. **Differentiate between an expression and a statement.**

Ans.:

Expression	**Statement**
It is a combination of letters, numbers and symbols	It is a programming instruction written accord
It represents some meanings in a program	It perform a specific task in a program
It is evaluated by python	It is executed by python
It produces value as a result	It does not produce any value
Example: (25 + 7) / 4	Example: If x<100:

38. WAP to read a number in n and prints n2, n3, n4

```
n=int(input("Enter value of n : "))
print("n^2 : ",n*n)
print("n^3 : ",n*n*n)
print("n^4 : ",n*n*n*n)
```

39. What is the error in following code. Rewrite the correct code.

```
weather='raining'
if weather='sunny':
    print('wear sunblock')
elif weather='snow':
    print('Going skiing')
else:
    print("None of the above")
```

Correctcode:

```
weather='raining'
if weather=='sunny':
    print('wear sunblock')
elif weather=='snow':
    print('Going skiing')
else:
    print("None of the above")
```

40. What is the syntax of if-elif statement in Python?

Ans: The syntax of if-elif statement in python is as follows:

```
If condition1:
        #code-block of statements when condition1 is true
elif condion2:
        #code-block of statements when condition2 is true
elif condition3:
        #code-block of statements when condition3 is true
.
.
.
else:
        #code-block of statements when all above conditions are false
```

41. What will be the output of the following ?

```
print(17//4)
print(17/4)
print(len(str(17//4)))
print(len(str(17/4)))
```

Ans:

4
4.25
1
4

42. Write the following expression in python.

(a) $\frac{1}{3}b^2h$ (b) $d = \sqrt{(x2 - x1)^2 + (y2 - y1)^2}$ (c) $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ (d) $a^n \times a^m = a^{n+m}$

43. Write a Program to print table of a number , say 5 with output

Ans:

```
num=5
for a in range (1,11)
  print (num,'x',a, "=" , num*a)
```

```
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
```

5 x 10 = 50

44. **Differentiate between cloud computing and grid computing with suitable examples.**
Answer – Because of cloud computing, the system is always accessible. In order to provide a setting where several computers can work together to complete a task as needed, grid computing refers to a network of the same or various types of computers. Also capable of working alone is each computer.

Example of Cloud computing – Gmail, Dropbox, Facebook, Amazon Web Services etc.
Example of Grid Computing – Online Games, Entertainment Industry, Database, WebLogic Application Servers etc.

45. **Justify the following statement:**
"Storage of data is cost-effective and time saving in cloud computing."
Answer – Because the cloud vendor manages everything, using cloud storage is both time and money efficient. We don't need to spend money on hardware resources, power, or support to manage and store data.
46. **Define block chain technology.**
Ans: Block chain technology uses a shared data base of chained blocks where copies of data base exist on multiple computers.
47. How are IoT and WoT related?
48. What is accelerometer and gyroscope?

Answer:
IOT is a internet of thing which is related with things like object which we will use daily. And WoT is web of things which is responsible to connect those IOT things to the web and communicate with the help of various devices like sensor.

IV. LONG ANSWER (any 2) 3 X 5 =15

49. What is block/code block/suit in Python?Explain with example program.

Ans: Sometimes a group of statements is part of another statement of function. Such a group of one or more statements is called **block** or **code-block** or **suit** in python. e.g.

```
if a>b:
    print("A is graeter")
    print("Value of A is : ",a)
else:
    print("B is graeter")
    print("Value of A is : ",b)
```

Here both the sections are separate code-blocks

50. WAP to find minimum element from a list of elements along with its index in the list.

This program is for 1 or 2 marks

```
L=[2,58,95,999,65,32,15,1,7,45]
print(L)
m=min(L)
print("The Minimum elements is : ",m)
print("Index of minimum element is : ",L.index(m))
```

Or

This program is for 3 or 4 marks

```
lst=eval(input("Enter List : "))
length=len(lst)
min_ele=lst[0]
min_index=0
for i in range(1,length-1):
    if lst[i]<min_ele:
        min_ele=lst[i]
        min_index=i
print("Given list is : ",lst)
print("The Minimum element of the list is : ")
print(min_ele," at index ",min_index)
```

output

```
Enter List : [67,87,56,6,4,89,99,3,2,56]
Given list is :  [67, 87, 56, 6, 4, 89, 99, 3, 2, 56]
The Minimum element of the list is :
2  at index  8
```

51. Explain the following along with their applications.
a) Artificial Intelligence
b) Machine Learning
Answer:
a) Artificial Intelligence:

In general term, AI is defined as to make a machine smart as it can do the task better than human. AI means to put a human intelligent into machine. Ai works like a human being. We have to trained our machine with information and knowledge. And machine also learnt from them. As well as from its past experience. As named suggest, we have to put intelligent artificially into the machine

Here are the some example of AI:

- Siri
- Google voice
- Alexa,Etc

b) Machine Learning

Machine learning is a part or application of artificial intelligence. Machine learning provide ability to teach, learn, expertise the machine without any human efforts. Four basic steps are there for building a machine learning application:

1. Select and prepare :

Firstly, we have to prepare a training dataset with respective data for particular machine learning model.

0. Choose an algorithm:

Then we have to choose a appropriate algorithm. It tells as how our machine learning model processes our model flow. There are two types of algorithms: Labeled and unlabeled

0. Training:

It is all about the checking, running, comparing and adjusting a result with the required output.

0. Improving the model:

The last step is improving quality, correctness, efficiency of a model with respect to time and size.