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# Questions:

## Long Answer Type Questions

1. Write a Python program to print the Fibonacci series.
2. Write a program to check whether a number is prime or composite.
3. Write a program to print the following pattern:
   A
   BCD
   EFGHI
   JKLMNOP
   QRSTUVWXY
4. Write a Python program to generate and display all the armstrong numbers between 1 and 200.
5. Write a program to print the following pattern.
   *
   **
   ***
   ****
   *****
6. Write a program to check whether a number is palindrome number or not.
   (A palindrome number is one which is same as its reverse)

## Short Answer Type Questions

7. Differentiate between identifier and keyword.
8. Write the value stored in the variable Num by each of the following statements.
   (i) Num=2*3-4
   (ii) Num=2+3-1*3
   (iii) Num (2+3)*2
9. Determine the hierarchy of operations and evaluate following expression.
   A=3*4//5+5// 7+8- 2+4//2.
10. What value will be stored in different variables. when the following Python statements are executed?
```
i = 10
j = i + 5
k = 1 + j / 5
l = k + 1 + 4
m = 2
n =k + m*l
print("i: ", i)
print("j: ", j)
print("k: ", k)
print("l: ", l)
print("m: ", m)
print("n: ", n)
```
11. Predict the output of the following program.
```
a = 5
b = a = 15
c = (a < 15)
print "a = ", a)
print ("b = ", b)
print ("c = ", c)
```
12. What is the output of the following code ?
```
num=4+float(7)/int(2.0)
print ("num=", num)
```
13. What will be the output of the following code?
```
a, b= 10, 5
X, y = a + b, b - 2
z = x - y
print ("x:", x, "y:", y, "z:", z)
```
14. What is the output of the following code:
```
>>> a = 10
>>> b =2
>>> print(" Output is ", (a + 10 * 2 + b))
```
15. Predict the output.
```
a, b = 10.15
x = 20
y = 25
a = x + y - b
x = a + b - y + 10
z=y+b * 3 + a
x = 50
```

```
a = x + y + z
print("a : ",a)
print("b: " ,b)
print (" x : " ,x)
print (" y :" ,y)
print (" z : " ,z)
```

16. Construct logical expressions to represent the following conditions.
    (i) Weight is greater than or equal to 115 but less than 125.
    (ii) Donation is in the range of 4000-5000 or Guest is 1.

17. Write an algorithm to find out whether the given number is divisible by 3 or not.

18. Draw a flow chart to find the factorial of any number.

19. What will be printed on the console by the below code:

```
x, y, z, k, j = 9, 7, 2, 2, 1
m = 5
if (x > y) :
if ( y > z and y > k):
m. = m - l
else:
k = k + 1
else:
j = j + l
print ( 'm =', m)
print ('k=', k)
print (' j =', j)
```

20. Rewrite the following code into for loop:

```
i = 3
while (i < 5)
if (i = = 4) :
print ("Welcome")
else: print ("No entry")
i - i + 1
print ("value of i", i)
```

21. Write a Python program that reads numbers from 1 to 10 using a loop, but stops the loop immediately when it encounters the number 7. Display the numbers printed before termination.

22. Find the output of the following code:

```
num-123
f=0
S=0
while (num > 3) :
rem = num % 100
if (rem % 2 ! = 0 ):
f + = rem
else:
s + = rem
num/ =100
print (f-s)
```

23. What will be the output of the following code? Explain how the jump statements affect the flow.

```
for i in range(1, 8) :
if 1% 20 == 0 :
continue
if i == 7:
break
print(i, end=" ")
```

24. Asish has written the following code, but he is getting some errors while executing it. Rewrite the correct code removing all the errors.

```
value=30
for val in range (0, value)
if u = 0 print (val + 4)
else if vals == 0;
print (val + 3)
else
print (val + 10)
```

25. Define the following terms
    (i) Comments
    (ii) Variables
    (iii) Data Types

26. Determine which of the arithmetic expressions are valid. If invalid, explain the reason. [(a, b, c) are integers, (p, q, r) are float and (x, y, z) are float].
    (i) p / q + a - c
    (ii) q (a + b - z / 4)
    (iii) p / q + a - c
    (iv) x / y + p * a/b
    (v) a * + b
    (vi) a +b*c*2

27. Evaluate the following expressions..
    (i) A=10* 4//2+4-2// 2 + 4 - 3 +5//8
    (ii) A=5+6//3+10* 3// 4 + 2 +3//4

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(iii) A=5* 5+4// 5 + 15-9//2+10

28. Predict the output:
(i) a = 3
b =a *2
print(a*3+6+b)
(ii) a, b = 12, 10
c=a// b + 4 * 2
d = c - 10
print(d)
(iii) a = 5
b = 6
print((a and b)
or (a > b) )
(iv) a = 4
b = 6
c = 10
print(a >= b)
or ( (c = - b)
and (not(c < a))))
(v) a = 4
b = 6
c = 10
print ( (a <= b)
and print(c)
((c == a) and
(not(c < b))))
(vi) a = 60
b = 10
c = 85 / b + a
print(int(c))
(vii) a = 3
b = 4
c = a ** b + 5
print(c)
(viii) b = 89
a = 78
c = (a <= b)
print(c)

29. Python is dynamic typed. Explain it.

30. Write a program to read a number. If the number is even print half the number otherwise print the next number. End your program by printing "Thank You".

31. Write a program to print negative, zero or positive according to whether variable x is less than zero, zero or greater than zero respectively.

32. Differentiate between break and continue statement with the help of an example.

## Case Study Questions

33. Data types are the classification of data items in Python. They define the type of value a variable can hold and what operations can be performed on it. Since everything in Python is an object, data types are actually classes, and variables are instances (objects) of these classes.
Python provides the following standard (built-in) data types:
• Numeric Represents numbers. It includes
→ int integers (e.g., 10, -5)
→ float decimal or floating-point numbers (e.g., 3.14, -2.5)
→ complex numbers with real and imaginary parts (e.g., 3 + 4j)
• Sequence Type An ordered collection of items that can be of the same or different data types.
e.g. list, tuple, and string.
• **Boolean** Holds only Two values - True and False
It represents truth values and is used in logical expressions and decision-making.
• Set An unordered, mutable collection that stores unique elements.
e.g. {1, 2, 3}
• Mapping An unordered collection of key-value pairs.
The standard mapping type in Python is the dictionary (dict).
(i) How many values are there in Boolean data type?
(ii) What do you mean by sequence data type?
(iii) List the types of numeric data type.
(iv) What is the use of None?
(v) Write the output of
>>> type("Arihant").

34. Riya wrote a program to print the Fibonacci series. But some words or lines had missing. Help her to execute the given program.
n = int. (input ("How many terms?))
n1, n2 = 0,1
count = 0
if n <= 0
print ("Please enter a positive number")
elif
print("fibonacci sequence upto", n, ":")
print (____)
else :
print ("Fibonacci sequence:")
while count <n:
print (n1)

n3 = _____
n1=n2
n2 = _____
count = count +1
(i) Write the symbol which will terminate the line 4.
(ii) Fill the blank in line 6 to satify the condition.
(iii) Write the variable which print in line 8
(iv) Write the value which will be assign to variable n3.
(v) Fill the blank in line 15.

35. Krrishnav is looking for his dream job but has some restrictions. He loves Delhi and would take a job there, if he is paid over ₹ 40000 a month. He hates Chennai and demands at least ₹ 100000 to work there. In any another location, he is willing to work for ₹ 60000 a month. The following code shows his basic strategy for evaluating a job offer.

```
pay = _____
location=_____
if location == "Mumbai":
print ("I'll take it!") #Statement 1
elif location == "Chennai":
if pay < 100000:
print ("No way") #Statement 2
else:
print("I am willing!") #Statement 3
elif location "Delhi" and pay > 40000:
print("I am happy to join") #Statement 4
elif pay > 60000:
print("I accept the offer") #Statement 5
else:
print ("No thanks. I can find something better") #Statement 6
```

On the basis of the above code, choose the right statement which will be executed when different inputs for pay and location are given.

(i) Input: location = "Chennai", pay = 50000
A Statement 1
B Statement 2
C Statement 3
D Statement 4

(ii) Input: location = "Surat", pay = 50000
A Statement 2
B Statement 4
C Statement 5
D Statement 6

(iii) Input: location = "Any Other City", pay = 1
A Statement 1
B Statement 2
C Statement 4
D Statement 6

(iv) Input: location = "Delhi", pay = 50000
A Statement 6
B Statement 5
C Statement 4
D Statement 3

(v) Input: location = "Lucknow", pay = 65000
A Statement 2
B Statement 3
C Statement 4
D Statement 5

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