

Candidates should open the top side of the seal of this Booklet and take out the OMR Answer Sheet placed between page no. 2 and 3.

Test Booklet No. :

**A3-R5 : Programming and Problem Solving  
Through Python**

Test Booklet Series : **24**

Time Allowed : 2 Hours

Maximum Marks : 100

Roll No. :

Answer Sheet No. :

Read the following instructions carefully before you begin to answer the questions.

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Name of Candidate : \_\_\_\_\_ Signature of Candidate : \_\_\_\_\_

1. What is the output of the following code ?
- ```
def s(n1):
    print(n1)
    n1 = n1 + 2
n2=4
s(n2)
print(n2)
```
- (A) 6 4                      (B) 4 6  
(C) 4 4                      (D) 6 6
2. What will be the output of following ?
- ```
Y=[2,5],6]
Y.sort()
```
- (A) [2,6,5]                      (B) [5],2,6]  
(C) Error                      (D) [6,5],2]
3. Which of the following error is returned by the given code ?
- ```
>>> f = open("test.txt","w")
>>> f.write(345)
```
- (A) Syntax Error              (B) Type Error  
(C) String Error              (D) Run Time Error
4. What is the output of the following code ?
- ```
a = set('abc')
b = set('cdef')
print(a&b)
```
- (A) {'c'}  
(B) {'a','b','c','d','e','f'}  
(C) {c}  
(D) None of these
5. A detailed flow chart is called as \_\_\_\_\_.
- (A) stack                      (B) macro  
(C) micro                      (D) union
6. Which of the following is used to define a block of code in Python language ?
- (A) try                      (B) Brackets  
(C) Indentation              (D) Catch
7. What is a variable defined outside a function referred to as ?
- (A) A static variable  
(B) A global variable  
(C) A local variable  
(D) An automatic variable
8. What will be output for the following code ?
- ```
import numpy as np
a = np.array([[1,2,3],[0,1,4]])
print (a.size)
```
- (A) 1                      (B) 5  
(C) 6                      (D) 4
9. Which mode creates a new file if the file does not exist ?
- (A) write mode  
(B) read mode  
(C) append mode  
(D) Both (A) and (C)
10. Structured program can be broken into \_\_\_\_\_ to assign to more than one developer.
- (A) Segments                      (B) Modules  
(C) Units                      (D) All the above
11. Which of the following will delete key-value pair for key="tiger" in dictionary ?
- ```
dic={"lion":"wild","tiger":"wild","cat":"domestic",
"dog"."domestic"}
```
- (A) del dic["tiger"]  
(B) dic["tiger"].delete()  
(C) delete(dic["tiger"])  
(D) del(dic["tiger"])

12. What will be the output of the following pseudo code, where & represent AND operation ?  
Integer a, b, c  
Set b = 5, a = 1  
c = a & b  
Print c  
(A) 1 (B) 3  
(C) 5 (D) 7
13. What will be the output of the following Python code ?  
x = 'abcd'  
for i in x:  
    print(i.upper())  
(A) a B C D (B) a b c d  
(C) error (D) A B C D
14. What is the output of the following code ?  
import numpy as np  
a = np.array([1,2,3,5,8])  
b = np.array([0,3,4,2,1])  
c = a + b  
c = c\*a  
print (c[2])  
(A) 10 (B) 21  
(C) 12 (D) 28
15. What is the output of the following code ?  
M=['b' \* x for x in range(4)]  
print(M)  
(A) [' ', 'b', 'bb', 'bbb']  
(B) ['b', 'bb', 'bbb', 'bbbb']  
(C) ['b', 'bb', 'bbb']  
(D) None of these
16. What type of data is : arr = [(1, 1), (2, 2), (3, 3)] ?  
(A) List of tuples  
(B) Tuples of lists  
(C) Array of tuples  
(D) Invalid type
17. What will be the output of following statement ?  
>>>"m"+"nl"  
(A) 'm+nl' (B) 'mnl'  
(C) 'm nl' (D) 'm'
18. Pictorial representation of an algorithm is called as \_\_\_\_\_.  
(A) Statement (B) Program  
(C) Flow chart (D) All the above
19. What will be the output of the following Python code ?  
def power(x, y=2):  
    r=1  
    for i in range(y):  
        r=r\*x  
    return r  
print (power(3))  
print (power(3,3))  
(A) 212  
    32  
(B) 9  
    27  
(C) 567  
    98  
(D) None of the above

20. A \_\_\_\_\_ statement is used when a statement is required syntactically but you do not want any code to execute.
- (A) break (B) pass  
(C) continue (D) none of these
21. Which of the following error is returned when we try to open a file in write mode which does not exist ?
- (A) File Found Error  
(B) File Not Exist Error  
(C) File Not Found Error  
(D) None of the above
22. Flow charts and Algorithms are used for \_\_\_\_\_.
- (A) Better Programming  
(B) Optimized Coding  
(C) Systematic testing  
(D) All the above
23. What will be the output of the following Python code ?
- ```
tuple1=(5,1,7,6,2)
tuple1.pop(2)
print(tuple1)
```
- (A) (5,1,6,2) (B) (5,1,7,6)  
(C) (5,1,7,6,2) (D) Error
24. What is the datatype of x ?
- ```
import numpy as np
a=np.array([1,2,3,4])
x= a.tolist()
```
- (A) int (B) array  
(C) tuple (D) list
25. What is the output of the following ?
- ```
y = 'klmn'
for i in range(len(y)):
print(y)
```
- (A) klmn klmn klmn klmn  
(B) k  
(C) k k k  
(D) None of the option
26. Which one of the following is immutable data type ?
- (A) list (B) set  
(C) tuple (D) dict
27. In which format Binary file contains information ?
- (A) Quick response code  
(B) Same format in which the data is held in memory  
(C) ASCII format  
(D) Unicode format
28. What does readlines() method return ?
- (A) Dictionary (B) String  
(C) Tuple (D) List
29. In python language, which of the following cannot be defined as variable ?
- (A) \_val (B) val  
(C) try (D) \_try\_
30. What will be the output of the following Python code ?
- ```
from math import factorial
print(math.factorial(5))
```
- (A) 120  
(B) Nothing is printed  
(C) Error, method factorial doesn't exist in math module  
(D) Error, the statement should be : print(factorial(5))

31. Which function is used to add an element (5) in the list list1 ?  
 (A) list1.sum(5)  
 (B) list1.add(5)  
 (C) list1.append(5)  
 (D) list1.addelement(5)
32. What will be the output of the following code snippet ?  

```
numbers = (4, 7, 19, 2, 89, 45, 72, 22)
sorted_numbers = sorted(numbers)
odd_numbers = [x for x in sorted_numbers if x % 2 != 0]
print(odd_numbers)
```

 (A) [7, 19, 45, 89]  
 (B) [2, 4, 22, 72]  
 (C) [4, 7, 19, 2, 89, 45, 72, 22]  
 (D) [2, 4, 7, 19, 22, 45, 72, 89]
33. What is the output of following Python code ?  

```
>>>print(5*(2//3))
```

 (A) 3 (B) 3.3  
 (C) 0 (D) error
34. Python is written in \_\_\_\_\_.  
 (A) Java (B) C  
 (C) PHP (D) All of the above
35. For performing the addition of two numbers, which of the following symbol in a flow chart are used ?  
 (A) Control flow (B) Terminal  
 (C) Processing (D) Decision
36. What will be the output of the following code snippet ?  

```
d = {3, 4, 5}
for k in d:
print(k)
```

 (A) {3, 4, 5} {3, 4, 5} {3, 4, 5}  
 (B) 3 4 5  
 (C) Syntax Error  
 (D) None of the above
37. What is the output of the following ?  

```
m = 0
while m < 5:
print(m)
m += 1
if m == 3:
break
else:
print(0)
```

 (A) 0 1 2 0 (B) 0 1 2  
 (C) 0 0 1 0 2 (D) error
38. Choose the correct option with respect to Python.  
 (A) Both tuples and lists are immutable  
 (B) Tuples are immutable while lists are mutable  
 (C) Both tuples and lists are mutable  
 (D) Tuples are mutable while lists are immutable
39. Hierarchy in a pseudo-code can be shown by :  
 (A) Curly Braces (B) Round Brackets  
 (C) Indentation (D) Semicolon

40. Kite/diamond symbol in flow chart is used for \_\_\_\_\_.
- (A) Execution (B) Decision  
(C) Statement (D) All of the above
41. Which statement is correct to import all modules from the package ?
- (A) from package import all  
(B) from package import \*  
(C) from package include all  
(D) from package include \*
42. f.read(5) will read \_\_\_\_\_ from a file (file object 'f').
- (A) 5 characters  
(B) 5 words  
(C) 5 lines  
(D) None of the above
43. Which of the following will read entire content of file (file object 'f') ?
- (A) f.reads( ) (B) f.read( )  
(C) f.read(all) (D) f.read( \* )
44. What will be the output of the following Python code ?
- ```
def func(a, b=5, c=10):
    print('a is', a, 'and b is', b, 'and c is', c)
func(13, 17)
func(a=2, c=4)
func(5,7,9)
```
- (A) a is 13 and b is 15 and c is 10  
a is 2 and b is 5 and c is 4  
a is 5 and b is 7 and c is 9  
(B) a is 13 and b is 17 and c is 10  
a is 2 and b is 4 and c is 4  
a is 5 and b is 9 and c is 7  
(C) a is 13 and b is 17 and c is 10  
a is 2 and b is 5 and c is 4  
a is 5 and b is 7 and c is 9  
(D) None of the above
45. NumPY stands for :
- (A) Numbering Python  
(B) Number In Python  
(C) Numerical Python  
(D) None of the above
46. The contents inside the "for loop" are separated by :
- (A) colon (B) comma  
(C) semicolon (D) hyphen
47. A \_\_\_\_\_ stores information in the form of a stream of ASCII or unicode characters i.e. human readable.
- (A) Text file (B) Binary file  
(C) Both (A) and (B) (D) None of these
48. What is the output of the following code ?
- ```
import numpy as np
a = np.array([1,2,3])
print(a.ndim)
```
- (A) 1 (B) 2  
(C) 3 (D) 0
49. What will be the output of the following pseudo code ?
- ```
Integer a, b
    Set a = 10, b = 5
    a = a mod (a - 6)
    b = b mod (b - 2)
    Print a - b
```
- (A) 4 (B) 0  
(C) 1 (D) 8

50. What is 'f' in the following statement ?  
`f=open("Data.txt", "r")`  
 (A) File Name (B) File Handle  
 (C) Mode of file (D) File Handling
51. What will be the output of the following Python code ?  
`from math import *  
 floor(11.7)`  
 (A) 12 (B) 11  
 (C) 11.0 (D) None of these
52. What will be the output of the following ?  
`print(sum(1,2,3))`  
 (A) Error (B) 6  
 (C) 1 (D) 3
53. In python language, which of the following operators is the correct option for raising k to the power l ?  
 (A)  $k^l$  (B)  $k**l$   
 (C)  $k^{^l}$  (D)  $k^*l$
54. Which of the following is not a control structure ?  
 (A) Loop (B) Process  
 (C) Decision (D) None of these
55. Which of the following symbols is used to represent output in a flow chart ?  
 (A) Square (B) Circle  
 (C) Parallelogram (D) Triangle
56. What will be output for the following code ?  
`import numpy as np  
 a = np.array( [2, 3, 4, 5] )  
 print(a.dtype)`  
 (A) int 32 (B) int  
 (C) float (D) None of these
57. Recursive function is \_\_\_\_\_.  
 (A) A function that calls itself  
 (B) A function that calls other functions  
 (C) Both (A) and (B)  
 (D) None of the above
58. Which statement will move file pointer 10 bytes backward from current position ?  
 (A) `f.seek(-10, 0)`  
 (B) `f.seek(10, 0)`  
 (C) `f.seek(-10, 1)`  
 (D) none of the above
59. In which of the following, data is stored permanently ?  
 (A) Variable  
 (B) File  
 (C) Both of the above  
 (D) None of the above
60. Which statement will return one line from a file (file object is 'f') ?  
 (A) `f.readlines()` (B) `f.readline()`  
 (C) `f.read()` (D) `f.line()`
61. Debugging is the process of fixing a \_\_\_\_\_ in the software.  
 (A) procedure (B) function  
 (C) bug (D) None of these

62. The sequence logic will not be used while \_\_\_\_\_.
- (A) Subtracting two numbers  
 (B) Comparing two data values  
 (C) Providing output to the user  
 (D) Adding two numbers
63. What will be the output of the following Python code ?
- ```
d1={"abc":5,"def":6,"ghi":7}
print(d1[0])
```
- (A) abc (B) 5  
 (C) {"abc":5} (D) Error
64. Which symbol is used as a flowline to connect two blocks in a flow chart ?
- (A) arrow (B) circle  
 (C) box (D) parallelogram
65. What is the output of the following ?
- ```
x=123
for i in x:
print(i)
```
- (A) 1 2 3 (B) 123  
 (C) Error (D) None of these
66. To use a module in another module, you must import it using an \_\_\_\_\_ statement.
- (A) import  
 (B) include  
 (C) both (A) and (B)  
 (D) none of the above
67. Choose the correct function declaration of fun1() so that we can execute the following two function calls successfully.
- ```
fun1(25, 75, 55)
fun1(10, 20)
```
- (A) def fun1(\*\*kwargs)  
 (B) def fun1(args\*)  
 (C) No, it is not possible in Python  
 (D) def fun1(\*data)
68. Which of the following words is not a keyword of python language ?
- (A) val (B) raise  
 (C) try (D) with
69. Which of the following is a valid arithmetic operator in Python ?
- (A) // (B) ?  
 (C) < (D) and
70. What is the value of the following Python code ?
- ```
>>>print(36 / 4)
```
- (A) 9 (B) 4  
 (C) 9.0 (D) 4.0
71. What will be the output of the following Python code ?
- ```
def display(b, n):
while n>0:
print(b, end="")
n=n-1
display('z', 3)
```
- (A) zzz  
 (B) zz  
 (C) Infinite loop  
 (D) An exception is thrown



72. What is the output of the following ?  
`print(max([1, 2, 3, 4], [4, 5, 6], [7]))`  
 (A) [4, 5, 6] (B) [7]  
 (C) [1, 2, 3, 4] (D) 7
73. Which of the following declarations is incorrect ?  
 (A) `_x = 2` (B) `x = 3`  
 (C) `__xyz__ = 5` (D) None of these
74. What is the output of the following code snippet ?  
`print([i.lower() for i in "HELLO"])`  
 (A) hello (B) ['h', 'e', 'l', 'l', 'o']  
 (C) hel (D) HELLO
75. What will be the output of the following Python code ?  
`>>>list1 = [1, 3]`  
`>>>list2 = list1`  
`>>>list1[0] = 4`  
`>>>print(list2)`  
 (A) [1, 4] (B) [1, 3, 4]  
 (C) [4, 3] (D) [1, 3]
76. Which of the following functions is a built-in function in python ?  
 (A) `factorial()` (B) `print()`  
 (C) `seed()` (D) `sqrt()`
77. What is the output of the following ?  
`n=5`  
`while n>0:`  
`n-=1`  
`if n ==2:`  
`continue`  
`print(n)`  
 (A) 5 4 3 1 0 (B) 4 3 1 0  
 (C) 4 3 2 (D) None of these
78. When we open file in append mode the file pointer is at the \_\_\_\_\_ of the file.  
 (A) anywhere in between the file  
 (B) end  
 (C) beginning  
 (D) second line of the file
79. What will following code segment print ?  
 if True or True:  
     if False and True or False:  
         `print('A')`  
     elif False and False or True and True:  
         `print('B')`  
     else:  
         `print('C')`  
     else:  
         `print('D')`  
 (A) A (B) B  
 (C) C (D) D
80. What will be the output of the following expression ?  
`x = 14`  
`print(x>>2)`  
 (A) 14 (B) 1  
 (C) 3 (D) 2
81. Which of the following software is required to run the hardware ?  
 (A) Task Manager  
 (B) Task Bar  
 (C) Program Manager  
 (D) Device Driver
82. The brain of computer system is \_\_\_\_\_.  
 (A) RAM (B) CPU  
 (C) ROM (D) Control Unit

83. What will be the output of the following Python code ?  
`len(["hello", 2, 4, 6])`  
 (A) Error (B) 6  
 (C) 4 (D) 3
84. What will be the output of following ?  
`import numpy as np`  
`a = np.array([[1,2,3],[4,5,6]])`  
`print(a.shape)`  
 (A) (2, 3) (B) (3, 2)  
 (C) (1, 1) (D) None of these
85. What will be the output of the following algorithm for a=5, b=8, c=6 ?  
 Step 1 : Start  
 Step 2 : Declare variables a, b and c.  
 Step 3 : Read variables a, b and c.  
 Step 4 : If a < b  
     If a < c  
     Display a is the smallest number.  
     Else  
     Display c is the smallest number.  
 Else  
     If b < c  
     Display b is the smallest number.  
     Else  
     Display c is the smallest number.  
 Step 5 : Stop  
 (A) a is the smallest number  
 (B) b is the smallest number  
 (C) c is the smallest number  
 (D) stop
86. The connector symbol for flow chart is \_\_\_\_\_.  
 (A) Circle (B) Parallelogram  
 (C) Diamond (D) All the above
87. Which of the following is not an advantage of using modules ?  
 (A) Provides a means of reuse of program code  
 (B) Provides a means of dividing up tasks  
 (C) Provides a means of reducing the size of the program  
 (D) Provides a means of testing individual parts of the program
88. Which function is used to write data in binary mode ?  
 (A) write (B) writelines  
 (C) dump (D) pickle
89. What is the use of the zeros() function in Numpy array in python ?  
 (A) To make a Matrix with all element 0  
 (B) To make a Matrix with all diagonal element 0  
 (C) To make a Matrix with first row 0  
 (D) None of the above
90. What will be the output of the following Python code ?  
`example = "helle"`  
`example.rfind("e")`  
 (A) 1 (B) 2  
 (C) 4 (D) 5
91. \_\_\_\_\_ function returns the current position of file pointer.  
 (A) get() (B) tell()  
 (C) seek() (D) cur()

92. What will be output for the following code ?
- ```
import numpy as np
ary = np.array([1,2,3,5,8])
ary = ary + 1
print (ary[1])
```
- (A) 0                      (B) 1  
(C) 2                      (D) 3
93. Which translator is used to convert assembly language into machine language ?
- (A) Compiler              (B) Interpreter  
(C) Assembler            (D) None of these
94. The correct extension of the Python file is \_\_\_\_\_.
- (A) .py                      (B) .pyth  
(C) .python                (D) None of these
95. Given a string `x="hello"` What is the output of `x.count('l')` ?
- (A) 2                      (B) 1  
(C) 0                      (D) none
96. Which of the following are valid string manipulation functions in Python ?
- (A) `count()`              (B) `upper()`  
(C) `strip()`                (D) All of the above
97. In which software development phase quality of software is documented ?
- (A) Testing                (B) Delivery  
(C) Idea                    (D) Development
98. Python supports the creation of anonymous functions at runtime, using a construct called \_\_\_\_\_.
- (A) pi  
(B) anonymous  
(C) lambda  
(D) none of the above
99. What will be output for the following code ?
- ```
import numpy as np
a = np.array([1,2,3,5,8])
print (a.ndim)
```
- (A) 0                      (B) 1  
(C) 2                      (D) 3
100. What will be the output of the following code snippet ?
- ```
from math import *
a = 2.19
b = 3.999999
c = -3.30
print(int(a), floor(b), ceil(c), fabs(c))
```
- (A) 2 3 -3 3.3            (B) 3 4 -3 3  
(C) 2 3 -3 3              (D) 2 3 -3 -3.3

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**SPACE FOR ROUGH WORK**