

KATHMANDU UNIVERSITY  
End Semester Examination [C]  
June/July 2024

Level : B.E.  
Year : I  
Time : 2 hrs. 30 mins.

Course : COMP 117  
Semester : I  
F. M. : 40

SECTION "B"

[6Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. What are the difference between interpreter and compiler? Which is used in python programming? [3+1=4]
2. Why indentation is important in python programming? Illustrate with suitable example [4]
3. Discuss identity operator and membership operator of python program. [4]
4. Differentiate between mutable and immutable data type. Illustrate with suitable example [4]
5. Write a python program to reverse a number. For example: 3551 is 1553. [4]
6. Write a Python program to generate a triangle shape using asterisks (\*) using nested for loops. The output should be as following. [4]

```
*  
* *  
* * *  
* * * *  
* * * * *
```

7. Write short notes on (Any Two) [2+2=4]
  - a. Comparison operators
  - b. NumPy
  - c. Dictionaries

SECTION "C"

[2Q × 8 = 16 marks]

Attempt *ANY TWO* questions.

8. a. Illustrate one example each for break, continue and pass statement. [3]  
b. Compare and contrast while loops with for loops in terms of usage and scenarios. [5]
9. a. Discuss the working principle of a recursive function with a help of a factorial program. [4]  
b. What are local variables and global variables in Python? Illustrate with suitable example. [4]

P.T.O.

10. a. Describe the different types of functions based on their argument and return type configurations, providing examples for each type. [6]

b. Explain the following Python code snippet, including its expected output: [2]

```
def display(x=2,y=3):  
    x=x+y  
    y += 2  
    print(x,y)  
  
display()  
display(7,8)  
display(9)
```

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Marks Scored:

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02 JUL 2024

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Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date :

SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose the most appropriate answer and mark [X] the most appropriate option.

- Which symbol is used for a condition statement in a flow chart?  
 circle                       diamond                       rectangle                       hexagonal
- Which of the following will be printed?  
x= 9.5  
y= 2  
print x//y  
 2.0                       4.25                       4.0                       4.5
- What will be the output of the following code?  
def ktm():  
    print ('Kathmandu')  
ktm()  
ktm()  
 ktm ktm                       Kathmandu  
 Kathmandu Kathmandu                       ktm
- Which character is used for commenting in Python?  
 #                       \$                       @                       &
- A \_\_\_\_\_ structure can execute a set of statements only under certain circumstances.  
 sequence                       circumstantial                       decision                       boolean
- The symbols <<, >>, and ^ are all \_\_\_\_\_ operators.  
 Bitwise                       Arithmetic                       Comparison                       Assignment
- What will be the output of str[0:3] if str= "Kathmandu"?  
 Kathmandu                       ndu                       Ka                       Kat
- Which of the following is a list?  
 [1, 2, 3]                       {7, 8, 9}                       (7, 8, 9)                       <4, 5, 6>
- What are algorithms and flow chart used for?  
 Better programming                       Easy testing  
 Efficient coding                       Above all
- What will be the output of the following code snippet?  
a = [1, 2, 3, 4, 5]  
sum = 0  
for ele in a:  
    sum += ele  
print(sum)  
 0                       5                       10                       15

11. A \_\_\_\_\_ is a variable that is created inside a function.  
 global variable  
 local variable  
 hidden variable  
 none of the above; you cannot create a variable inside a function
12. Which of the following data types does not belong to Python?  
 String                     Tuple                     Dictionary                     Structure
13. A(n) \_\_\_\_\_ is a piece of data that is sent into a function.  
 argument                     parameter                     variable                     recursion
14. Which statement immediately terminates a loop in Python?  
 break                     continue                     exit                     stop
15. Which of the following operators is the correct option for power(xy)?  
 x ^ y                     x\*\*y                     x ^^ y                     x ^ \* y
16. What will be the output of the following code?  

```
myTuple = (1, 2, 3);
print(myTuple[1])
```

 1                     2                     3                     4
17. What is the output of this code:  

```
def add(x, y):
    return x + y
print(add(3, 4))
```

 3                     4                     7                     1
18. In python programming, the concept of decision making or selection is implemented with the help of \_\_\_\_\_ statement.  
 while loop                     for loop                     if...else                     function
19. Which of the following statements is **FALSE** about recursion?  
 Every recursive function must have a base case  
 Infinite recursion can occur if the base case isn't properly mentioned  
 A recursive function makes the code easier to understand  
 Every recursive function must have a return value
20. What does Matplotlib provide in Python?  
 Data manipulation                     Data visualization  
 Number Calculation                     Text processing