



Reg. No. :

Name :

V Semester B.Sc. Degree (C.B.C.S.S. – Supplementary)
Examination, November 2023
(2017 and 2018 Admissions)
CORE COURSE IN PHYSICS
5B09PHY : Python Programming

Time : 3 Hours

Max. Marks : 40

SECTION – A

(Very short answers type – **Each** carries 1 mark – Answer **all** questions) (4×1=4)

1. What will be the datatype of var in the code given below ?

```
var = 10
print(type(var))
var = "Hello"
print(type(var))
```

2. What is the syntax for if statement ?
3. What is the difference between `x = 5` and `x == 5` ?
4. What is interpolation ?

SECTION – B

(Short answer type – **Each** carries 2 marks – Answer 7 questions out of 10) (7×2=14)

5. What are Python packages ?
6. What is an Array ?
7. What is the syntax for 'while' loop ?
8. How can we add numbers in given list without using loop [2, 4, 10, 2, 8] ?

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9. What are the uses of numerical methods ?
10. What is a dictionary in python ? What are the uses of a dictionary ?
11. Explain docstring.
12. What is the meaning of using a negative index ? Give example.
13. What is the difference between list and tuple ?
14. What are the limitations of python ?

SECTION – C

(Short essay/problem type – **Each** carries 3 marks – Answer 4 questions out of 6) (4×3=12)

15. Write a python Program to Convert Kilometers to Miles.
16. import numpy as np
`a = np.zeros(5)`
`b = np.zeros((3, 2))`
`c = np.arange(2, 3, 0.1)`
`p = np.linspace(1, 2, 5)`
 What are the values of a, b, c and p ?
17. Write a program to print fibonacci series.
18. Write a Python programme that uses nested loops to add the given two matrices, X and Y, where
- ```
X = [[1,2,3],
 [4,5,6],
 [7,8,9]]
Y = [[10,11,12],
 [13,14,15],
 [16,17,18]].
```



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19. Given a dictionary :
- ```
data = { "Bob": 23, "Charlie": 36, "Alice": 72, "Eric": 18, "David": 9}
```
- Write a python code to sort the dictionary in descending order without using loops. Output should be a dictionary.
20. Write a program to split the string into lists of strings.
 Input : Hello Good Evening
 Output : ['Hello', 'Good', 'Evening']

SECTION – D

(Long essay type – **Each** carries 5 marks – Answer 2 questions out of 4) (2×5=10)

21. Write a python program to find uncommon words from two strings.
22. Write a program to generate a sine and cosine wave and plot it with its coordinates.
23. Write the value of z.
`x = np.array([1, 8, 3])`
`y = np.array([11, 18, 13])`
 a) `z = x + y`
 b) `z = x*y`
 c) `z = np.delete(x, 1)`
 d) `z = np.dstack((x, y))`
24. Write a python program to generate a file which contains
- ```
x x**2
0 0
1 1
2 4
3 9
4 16
5 25
```