K24U 0074

Reg. No.: .....

Name : .....

Sixth Semester B.Sc. Degree (C.B.C.S.S.-OBE – Regular/Supplementary/ Improvement) Examination, April 2024
(2019 to 2021 Admissions)
DISCIPLINE SPECIFIC ELECTIVE IN PHYSICS
6B14PHY(1) : Python Programming

Time : 3 Hours

Max. Marks : 40

PART – A

Short answer questions, answer **all** questions. **Each** question carries **1** mark.

1. Which are the two modes of using Python ?
2. Write a python instruction to read an integer from the keyboard and save as 'n'.
3. The value of the python expression 3*9**1/2 is _____
4. Write the python instruction to import pi, sin function and cos function from the numpy module.
5. What is the output of the program :

```
for i in range (5) :
    if i == 3 :
        continue
    print (i, i **2)
```

6. Write python code to create an array of integers from 5 to 10, (including 5 and 10). **(6×1=6)**

PART – B

Short essay questions, answer **any 6** questions. **Each** question carries **2** marks.

7. List the rules to name an identifier.
8. With example explain any two manipulations of list.

P.T.O.

K24U 0074

9. Explain any two built in functions in python.
10. Write a program to find the factorial of an integer using the module math or numpy.
11. What do you mean by vectorized functions ?
12. Explain the instructions continue and break.
13. Write the syntax and explain the for loop.
14. Explain polar() in matplotlib. **(6×2=12)**

PART – C

Problems, answer **any 4** questions. **Each** question carries **3** marks.

15. Write a program to read the coefficients of a quadratic equation and print its roots.
16. Briefly explain the data types supported by python.
17. Explain how user defined functions are created in python.
18. Write a python program to find dot product of two vectors. Read the x, y and z components from the key board and store it as an array.
19. Explain any three methods to create numpy arrays. Give one example for each.
20. Write a python program to plot cos function in the range 0 to 6π. **(4×3=12)**

PART – D

Long essay questions, answer **any 2** questions. **Each** question carries **5** marks.

21. List various Operators in python.
22. Explain if-elif-else structure in python.
23. Write notes on Saving and restoring arrays. Explain with suitable example.
24. Explain the plot() in the matplolib module. Write a python program to plot the trajectory of a projectile. **(2×5=10)**
