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**Question Paper Code:U5703**

B.E./B.Tech. DEGREE EXAMINATION, MAY 2024

Fourth Semester

Mechanical Engineering

21UME503 –OBJECT ORIENTED PYTHON PROGRAMMING

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

- \_\_\_\_\_ is a valid way to declare a dictionary in Python. CO1-U  
(a) {1: "one", 2: "two", 3: "three"}                      (c) (1: "one", 2: "two", 3: "three")  
(b) [1: "one", 2: "two", 3: "three"]                      (d) <1: "one", 2: "two", 3: "three">
- Write the output of the following Python function. CO2 -App  
len(["hello", 2, 4, 6])  
(a) Error                      (b) 3                      (c) 6                      (d) 4
- \_\_\_\_\_ is/are present in the function header. CO1- U  
(a) function name                      (b) keyword                      (c) parameter list                      (d) All the above
- \_\_\_\_\_ is a built-in function in python. CO1-U  
(a) fact( )                      (b) print( )                      (c) power                      (d) squareroot( )
- Output of the following code will be \_\_\_\_\_ CO1-U  

```
import random
nums = [1, 2, 3, 4, 5]
random.shuffle(nums)
print(nums)
```

  
(a) [1, 2, 3, 4, 5]                      (c) A random ordering of the numbers 1 through 5  
(b) [5, 4, 3, 2, 1]                      (d) An error

6. Which function is used to shuffle a list in Python? CO1-U  
 (a) random.shuffle() (b) shuffle() (c) list.shuffle() (d) random\_list()
7. How many objects and reference variables are there for the given Python code? CO4-App  
 class A:  
     print("Inside class")  
 A()  
 A()  
 obj=A()  
 (a) 2 and 1 (b) 3 and 3 (c) 3 and 1 (d) 3 and 2
8. The \_\_\_\_\_ keyword defines a template indicating the data that will be in an object of the class and the functions that can be called on an object of the class. CO1-U  
 (a) class (b) object (c) class (d) instance
9. What will be output for the following code? CO4 - App  
 try:  
 print(x)  
 except:  
 print("An exception occurred")  
 (a) x (b) An exception occurred (c) Error (d) None of the above
10. \_\_\_\_\_ is a python object that represents an error. CO1 - U  
 (a) Interpreter (b) Compiler (c) Exception (d) Module
- PART – B (5 x 6= 30 Marks)
11. Write a Python program to calculate the area of a circle with radius value of 10cm. CO2 - App
12. Write a Python program to print the odd numbers in a range of 10 using while loop. CO2 - App
13. Write a Python program to create a numpy 2D - array for the values [1,2], [3,4]. CO3 - App
14. Define a class circle using radius and compute the area of circle using constructor method. Take radius = 10 cm. CO4 - App
15. Explain the syntax of file handling with an example. CO1 - U

PART – C (5 x 10= 50 Marks)

16. (a) Write a Python program create a week day from “Sunday” to “Saturday” using tuple. CO2 - App (10)
- (a) Call the first index value  
(b) Try to append with new string “Goodday” in the tuple. If not then justify your answer.

Or

- (b) Write a Python program to create a dictionary of keys x, y, and z CO2 - App (10) where each key has the value of list from 11-20, 21-30, and 31-40 respectively.
- (a) Access the fifth value of each key from the dictionary.  
(b) Update the dictionary with the key ‘w’ has the value of list from 41-50.  
(c) Call all the values from w, x, y and z.

17. (a) Write a shutdown program: CO2 - App (10)
- Define a function that takes one argument. If the function receives "yes", it should return "Shutting down", "no", then it should return "Shutdown aborted", if gets anything other than those inputs, it should return "Sorry".

Or

- (b) A steel bar of 40 mm × 40 mm square cross-section is subjected to CO2 - App (10) an axial compressive load of 200000 N. If the length of the bar is 2000 mm and  $E = 200e^9$  Pa. Calculate the elongation of the bar using function with required arguments.

18. (a) Write a Python queue program for the range of 51 to 60 and returns CO3 - App (10) first in first out.

Or

- (b) Write a Numpy program to create the 2D array CO3 - App (10)  $[[1,2,3],[4,5,6],[7,8,9]]$  and find the addition of the two arrays and find the transpose for the output.

19. (a) Create a class student with the following as input and assign a object CO3 - App (10) for this using constructor method. (rollno, name and age)

Or

- (b) Write a program to create two classes for calculating pressure and CO3 - App (10) area by getting the input data from the user and use the output in third class and calculate the stress value.

20. (a) Write a Python String Format Program to draw a table with Left, Centre and Right alignment for the given below values: CO3 - App (10)

1		2		3
4		5		6
7		8		9
10		11		12
13		14		15

Also use “=” for Left Alignment, “#” for Centre Alignment and “\*” for Right Alignment.

Or

- (b) Write a simple exception handling program for list addition. CO3 - App (10)
- ```
List1 = [100, 200, 300, "400", 500]
List1 = [100, 200, 300, 400, 500]
```