Reg. No. :

Question Paper Code: U4827

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

Fourth Semester

Information technology

21UIT427 - PYTHON OBJECT ORIENTED PROGRAMMING

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Write the python code to find the factorial of a given number   CO2-App

2. Write the python code to find the minimum among the list of 5 numbers.   CO2-App

3. Define the usage of count() method with suitable example.   CO1-U

4. Create a dictionary items and add an element in the previous dictionary list   CO2-App

5. List out the features of object oriented programming.   CO1-U

6. What will be the output of the following Python code? Justify your answer.   CO2-App
    class change:
    def __init__(self, x, y, z):
    self.a = x + y + z
    x = change(1,2,3)
    y = getattr(x, 'a')
    setattr(x, 'a', y+1)
    print(x.a)

7. Suppose B is a subclass of A, to invoke the __init__ method in A from B, what   CO2-App
    is the line of code you should write?

8. What is packing and unpacking in python? Explain with syntax and example.   CO1-U

9. What is the output of the following code? CO2-App

```
Def foo():
    try:
        return 1
    finally:
        return 2
k = foo()
print(k)
```

10. What is a try/ catch block? CO1-U

<center>PART – B (5 x 16= 80 Marks)</center>

11. (a) Develop a computing solution for the following problem and also list out the data types with neat syntactical explanation   CO2-App   (16)
A pizza in a circular shape with 8 inches and which is placed in a square box whose side length is 10 inches. Find how much of the box is "empty"?

<center>Or</center>

(b) (i) Write a python program to calculate tax given the following conditions: CO2-App   (10)
If income is less than Rs. 1, 50,000, then no tax. If taxable income is Rs. 1, 50,001 – Rs. 3, 00,000 then charge 10% tax. If taxable income is Rs. 3, 00,001 – Rs. 5, 00,000 then charge 20% tax. If taxable income is above Rs. 5, 00,001 then charge 30% tax.

(ii) Write a python program to find the largest among 3 numbers.   CO2-App   (06)

12. (a) Write the python code for First In First Out Queue by using the input element and expected outputs are listed below, also List out the queue operations with detail diagrammatical explanation   CO2-App   (16)
- Input elements: 0 1 2 3 4 5
- Delete any of the elements and print the output.
- Print the size of the queue.
- Print the head of the queue

<center>Or</center>

(b) (i) A librarian wishes to maintain books details such as ISBN, Book Name, Author Name, and Year published, Publisher Name. He wishes to retrieve the book details in the following scenario: CO2-App   (10)

    (i) Retrieve the complete details of the book on giving ISBN.

    (ii) Retrieve the details of the book which published after the year 2015.

    (iii) Retrieve the details of the book whose author name is 'Andrew'.

(ii) Write a Python program to remove the duplicates from a list.   CO2-App   (6)

13. (a) Write a python code by implementing the class object concept for the below scenario and also explain them in detail with Syntax and various examples   CO2-App   (16)

Create a Class named as "Mobile" with price, brand and version as attributes then initialize 2 objects called Mobile1 and mobile2

Or

(b) (i) Develop a Python program using functions that will compute and print thearea of any four geometric shapes. Write a main function to get the inputand invoke the function using conditional statement.   CO2-App   (8)

(ii) Develop a user defined function in python program to calculate the length of a string without using a built-in function   CO2-App   (8)

14. (a) Explain about inheritance and its types in detail with syntax, example program and with neat diagrammatical explanation   CO1-U   (16)

Or

(b) Discuss in detail about the Polymorphism and Encapsulation with suitable example and syntax.   CO1-U   (16)

15. (a) Write a python code to illustrate the division operation by using the exception handling methodology with 4 possible cases.   CO2-App   (16)

Case 1: No Exception, Case 2: with exception, Case 3: Using else Clause, Case 4: Finally keyword and Explain each keyword in detail with an example

Or

(b) Write a python code by string manipulation concept for the below   CO2-App   (16)
     scenario and also explain + operator and *operator with Syntax and
     with detailed explanation.
     Create a new string made of an input string's first, middle, and last
     character.
     Given:
     str1 = "James"
     Expected Output:
     Jms

U4827