Question Paper Code: U4827

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Fourth Semester

Agricultural Engineering

21UIT427 - PYTHON OBJECT ORIENTED PROGRAMMING

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1. List down the different types of operator.   CO1-U

2. Give the various data types in Python with example.   CO1-U

3. Create a dictionary items and find the length of the items listed in dictionaries   CO1-U

4. Define the usage of count() method with syntax and with an example   CO1-U

5. What is object? How it is created? Explain with syntax and example.   CO1-U

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

7. What is single inheritance? Explain with an example   CO1-U

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

9. What is the difference between catch block and finally block?   CO1-U

10. List four different ways to perform string formatting in Python   CO1-U

PART – B (5 x 16= 80Marks)

11. (a) Develop a computing solution for the following problem using   CO2-App   (16)
    python and also list out the data types with neat syntactical
    explanation .
    (A) Mark processing system (Record has the following fields:
    Name, Reg_no, Mark1, Mark2, Mark3, Mark4, Total, average).
    Generate student information with total and average marks.

Or

(b) Write a python code by implementing basic data type and variable operations for the below scenario and also explain their types in detail with Syntax and examples CO2-App (16)

The marks scored by the students find top three scores and find average.

Student Name Marks Scored

John 86.5	Jill 84.5	Harry 72.1	Joe 80.5	Jack 91.2

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 element and print the output.
- Print the size of the queue.

Print the head of the queue

Or

(b) write a python program for the below scenario using list operations and also explain in detail CO2-App (16)

In a class of 10 numbers of students, 6 students are selected for state cricket academy. Sports faculty of this school has to report to the state cricket academy about the selected students' physical fitness. Here is one of the physical measures of the selected students'; Height in cm is given for those 6 selected students [153,162,148,167,175,151].

By implementing functions, do the following operations. State academy selector has to check

(i) Check the height is present in the selected students list or not.

(ii) has to order the height of students in an incremental manner

Identify the maximum height from the list.

13. (a) What is a class? What is the relation between an object and a class? Write a program which shows how to define a class, how to access member functions and how to create and access objects in Python. CO1-U (16)

Or

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(b) Discuss in detail about python decorators and explain how to create python decorators with neat explanation using syntax and examples CO1-U (16)

14. (a) Write a Python code by implementing single inheritance concept for the below scenario and also explain them in detail with syntax and neat diagrammatical explanation. CO2-App (16)

Create two classes, Nokia1 and Nokia2. The Nokia1 class contains two class-level attributes, company and website, and a method contact_details which prints the company's address. Similarly, Nokia2 class is a subclass of the Nokia1 class, and it contains two instance-level attributes, name and year, and a method product_details which prints the product details?

Or

(b) Write a Python program by implementing arguments for the below concept and also explain in detail with its types, syntax, example program and with neat explanation. CO2-App (16)

A. Find the area and perimeter by using the Default argument concept, the given inputs are width parameters who has the default value 1 and height as 2.

B. Compute a function by passing the paraments name and score , give out the conditions (> 80 : 'A', 80>Score >70 : 'B' , 70> score > 60 : 'C' and below the marks assigned should get 'D' grade) using Keyword arguments

15. (a) Write a python code to illustrate a solution for any mathematical operation 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

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(b) Write a python program by implementing string formatting for the below concept and also explain in detail with example program and explanation.

CO2-App   (16)

    i)   Embed a string using "Formatting with % Operator".

    ii)   Do a variable substitution by names using – "format () string method."

    iii)   Embed arbitrary Python expressions and perform inline arithmetic with using "Formatting with string literals, called f-strings"

    iv)   Use placeholder names formed by $ with valid Python identifiers. By using "Formatting with String Template Class"

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