Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U4827

B.E./B.Tech. DEGREE EXAMINATION, NOV 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.	List the advantages of python programming	CO2-App
2.	Give the python code to find the minimum among the list of 10 numbers.	CO2-App
3.	Define the usage of count() method with suitable example.	CO1-U
4.	What is Python Counter? Explain with an example	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.
	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)
		CO2-App

7.	Suppose B is a subclass of A, to invoke the __init__ method in A from B, what is the line of code you should write?	CO2-App
8.	What is packing and unpacking in python? Explain with syntax and example.	CO1-U

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

10. What is string formatting, explain with an example CO1-U

PART – B (5 x 16= 80 Marks)

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"?

Or

(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 a python program by implementing Dictionary operations for the below scenario CO2-App (16)

A university wishes to create and maintain the details of the students such as Rollno, Regno, Name, Dept, Batch, Contact_no, nativity (Indian/NRI) as key value pairs.
Display the complete student details on giving
(i) Rollno as input.
(ii) Whose nativity belongs to NRI
(iii) Whose department is CSE.

Or

(b) Write a python program for the below concept using queue and explain in detail with neat diagrammatical explanation. CO2-App (16)

Create a First In First Out Queue with an input whose list contains a set of 8 elements 0,5,4,7,9,8,4,3. Using the elements do the following operations given
(i) Add the elements in a queue.
(ii) Remove an element from the queue and print the remaining elements

13. (a) Discuss in detail about python decorators and explain how to create python decorators with neat explanation — CO1-U — (16)

Or

(b) Discuss in detail about the python classes and objects with suitable syntax? — 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 that have the default value 1 and height as 2.

B. Compute a function by passing the permanents 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 the use and syntax for the following methods with some example code for each parts: — CO2-App — (16)

a) open()
b) read()
c) seek()
d) dump()

Or

(b) Differentiate between the following methods. — CO2-App — (16)

a) text file and binary file
b) readline() and readlines()
c) write() and writelines()
d) tell() and seek ()