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

Question Paper Code: U3E03

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

Third Semester

Artificial Intelligence & Data Science

21UAD303 – OBJECT ORIENTED PROGRAMMIMNG USING PYTHON

(Regulation 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. _____ represents an entity in the real world with its identity and behavior. CO1- U

   (a) Method (b) Object (c) Class (d) An Operator

2. What does print(Test.__name__) display(assuming Test is the name of the class)? CO1- U

   (a) () (b) Exception is thrown. (c) Test (d) __main__

3. How many types of constructors are available for use in general (with respect to parameters)? CO1- U

   (a) 2 (b) 3 (c) 4 (d) 5

4. How many except statements can a try-except block have? CO1- U

   (a) zero (b) one (c) more than one (d) more than zero

5. What is the maximum possible length of an identifier? CO1- U

   (a) 31 characters (b) 63 characters

   (c) 79 characters (d) none of the mentioned

PART – B (5 x 3= 15 Marks)

6. Explain Class with Example CO1- U
7. Write down the syntax for extending a class and their attributes in python. CO1- U
8. What are the possible relationships between classes? CO1- U
9. List the blocks available to handle exception in python CO1- U
10. Write the steps to test a python program. CO1- U

PART – C (5 x 16= 80Marks)

11.	(a)	What is Modular Programming? How it is achieved through Object Oriented approach	CO1- U	(16)
		Or		
	(b)	Compare Classes and Objects and also Illustrate with an example	CO3- Ana	(16)
12.	(a)	What is the purpose of Static Data Members and Functions. Explain with suitable examples	CO2- App	(16)
		Or		
	(b)	How do you enforce Abstraction and encapsulation in Python. Give examples	CO1- U	(16)
13.	(a)	Explain Different Types of Constructors With Suitable Program	CO2- App	(16)
		Or		
	(b)	In a library there are many books. Each book is written by an author. All authors are identified by their name, age and country which they belong to. The books are identified by name, ISBN code, year of publication and price. The authors write books and attend press meetings. Through the books one should be able to get details of the author who wrote the book. Create the class diagram for representing the above scenario by choosing the class names, attributes, methods and relationships from the list given. Assume that all instance variables cannot be accessed outside the class whereas methods can be accessed. Write code to implement the aggregation operation	CO2- App	(16)
14.	(a)	Briefly explain the purpose of abstract classes with example	CO1- U	(16)
		Or		
	(b)	Develop a python program to check the validity of an IP address. An IP address is said to be valid, if the octet values falls within the range of (0-255)	CO2- App	(16)
15.	(a)	Develop a python program that matches a word contain gin ‘g’ followed by one or more e’s using regex	CO2- App	(16)
		Or		
	(b)	What are the differences between normal expressions and python RegEx? Explain with examples	CO1- U	(16)