SVKM'S NMIMS

MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT& ENGINEERING/

SCHOOL OF TECHNOLOGY MANAGEMENT

Academic Year: 2023-2024

Program/s: B.Tech /MBA.Tech /B.Tech Cyber Security

Year: II Semester: IV

Stream/s :IT, CSECS

Subject: Object Oriented Programming

Time: 3 hrs (10:00 to 1:00 PM) AM

Date: 5/ 7/ 2024

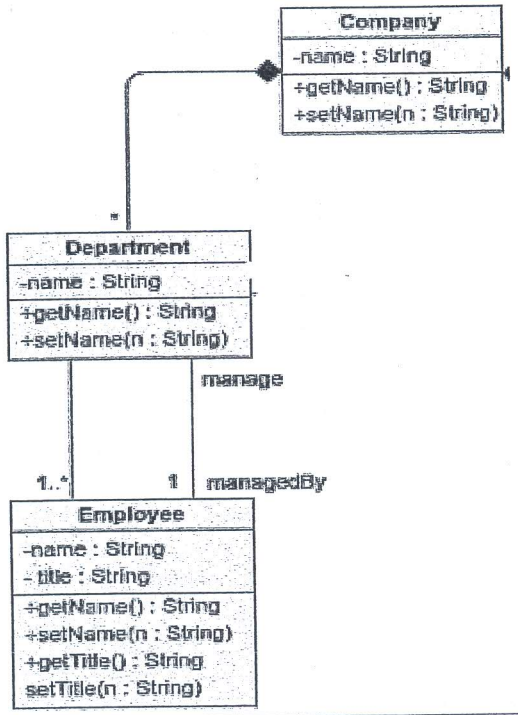
No. of Pages:3

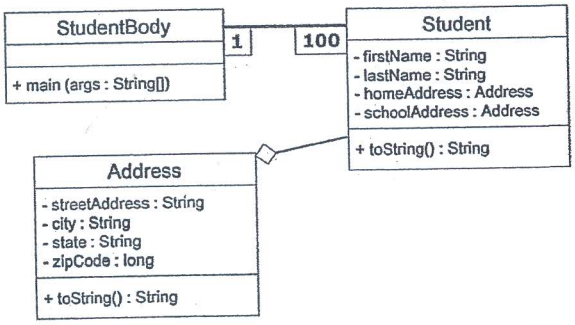
Marks: __100__

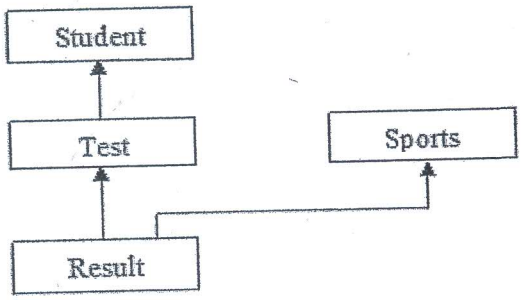
Re-Examination (2022-23 year)

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) Question No. _1___ is compulsory.
2) Out of remaining questions, attempt any __4___ questions.
3) **In all ___5_ questions to be attempted.**
4) All questions carry equal marks.
5) **Answer to each new question to be started on a fresh page.**
6) **Figures in brackets on the right hand side indicate full marks.**
7) **Assume Suitable data if necessary.**

Q1		Answer briefly:	[20]
CO-1 ; SO-1 ; BL-1	a.	Implement classes as shown in the Class diagram below. Write a test program to test the classes created.  	

CO-1 ; SO- 1; BL-1	b.	Implement a function that finds the number of occurrences of a specified character in the string. Write a test program that prompts the user to enter a string followed by a character and displays the number of occurrences of the character in the string.	
Q2 CO-2; SO-1; BL-2		Create a class 'student' having data members: name of the student, roll no of the student and division. Derive a class test from student having data members: marks of 3 subjects, total marks, average marks. Create a class result and check whether the student is passed or failed. Provide constructors, read () and display () methods in all classes. Create object of class result author and display all the details with status pass or fail.	[20]
Q3 CO-2; SO-1; BL-3		Implement classes as shown in the Class diagram below. Create appropriate objects to demonstrate the usage of the classes created. 	[20]
Q4 CO-2,3; SO-2; BL-5		Write a Program to Implement a Library Management System. This system should consist of three classes: Book, Member, and Borrow. The Book class should have members such as bookId, title, and author. The Member class should have members like memberId, name, and email. Create an interface named LibraryServices that includes methods like checkAvailability() and calculateFine(). The Borrow class should inherit properties from both Book and Member classes and include additional members like borrowDate and returnDate. Implement LibraryServices in the Borrow class to check the availability of the book and calculate the fine based on the number of days a book has been borrowed. The fine calculation should consider factors like book demand and member type (e.g., student, faculty).	[20]
Q5 CO-2; SO-1; BL-3		Write a java code to display all the contents of the file and apply exceptional handling.	[20]
Q6 CO-2; SO-1; BL-2		Write a program to considered a class Shopping Portal which has total three methods with same name **makePayment().** The business logic of this method is to perform the payment transactions. Payment can be done either of following modes.	[20]

		• Through Internet Banking. • Using UPI Support Application. • With Credit Card or Debit Card .	
Q7: CO-2,3; SO-2; BL-5		WAP to implement three classes namely Student, Test and Result. Student class has member as rollno, Test class has members as sem1_marks and sem2_marks and Result class has member as total. Create an interface named sports that has a member score (). Derive Test class from Student and Result class has multiple inheritances from Test and Sports. Total is formula based on sem1_marks, sem2_mark and score.  	[20]