BMS COLLEGE OF ENGINEERING, BANGALORE-19

(Autonomous Institute, Affiliated to VTU)

Department of Computer Science and Engineering

Course Code : 23CS3PCOOJ | **FIRST INTERNALS**

Semester : III | **Course Title : Object Oriented Java Programming**

Faculty Handling the Course: Dr. SP, Prof. SWS, Prof. VBM, Prof. PS, Dr. NV, Prof.SA | **Maximum Marks: 40** | **Date: 4/11/24**

Instructions: No choice in Part A and Part B. *Internal choice is provided in Part C.*

PART-A

No.	Question	Marks	CO	PO	BL
1.	Demonstrate Type conversion and Type casting by applying them in an appropriate example program.	5	1	1	2

PART-B

No.	Question	Marks	CO	PO	BL
2.a.	**Complete the code snippet to create and print a 2d array in the format given here.** class TwoDA { public static void main(String args[]) { int twoD[][] = …… …… }} **Expected Output:** 1 2 3 4 5 6 7 8 9 10	5	2	2	4

2.b.	**Analyze the given Java program and write the expected output on execution.**
	class UseStatic {
	static int a = 10,b;
	static{System.out.println("Good Morning");}
	static void stameth(int x) {
	System.out.println("x = " + x +" \na = "+ a +"\nb = " + b);}
	static {
	System.out.println("Static block initialized.");
	b = a * 4;
	}
	public static void main(String args[])
	{ stameth(100);} }
		5	2	2	4

2.c.	**Analyze the errors in the given program. Write the corrected program. Underline the places where errors are corrected.**
	class TwoGen<T o, V p> {
	T ob1; V ob2;
	TwoGen(int o1, float o2) {
	ob1 = o1; ob2 = o2;
	}
	void showTypes( ) {
	System.out.println("Type of T is " + ob1.Class( ).Name( ));
	System.out.println("Type of V is " + ob2.Class( ).Name( ));
	}}
	class SimpGen {
	public static void main(String args[]) {
	TwoGen<int, float> tgObj = new TwoGen<int, float>(88, 458.26);
	tgObj.showTypes( ); } }
		5	2	2	4

PART- C

No.	Question	Mar	CO	PO	BL
3.a.	Create a class **Distance** with private instance members feet and inches. Include following methods to i. set the values for feet and inches ii. display the values for feet and inches iii. add two distances considering the fact that 12 inches = 1 foot and return back the resultant distance object. iv. compare and return the highest among two distance objects	10	3	3	6
	OR				
3.b.	Create a class **Book** with members Bookid, Bookname, No_of_pages, Publisherid and Price. Write a program to create an array of n Book objects. Include methods that display the following according to requirement. i. Name and Id of the book which is the most expensive one ii. Name and Id of the books published by a given Publisherid (accept from user).	10	3	3	6
4.a.	Write a Java program to create an abstract class called **Employee** with variables emp_ID, emp_Name and salary and a method Cal_Salary( ). Derive two classes **Permanent_Emp** and **Temporary_Emp** from Employee class which includes methods to set and get details of the employee. Test the classes defined demonstrating dynamic method dispatch. Demonstrate any one of uses of super keywords.	10	3	3	6
	OR				
4.b.	Create a class **Student** with members- usn, name, age, dept and sem. Include methods to set and print the values. Derive two subclasses- **PG_student** with member intern_companyname and **ResearchScholar** with member no_publications. Create n objects for each of the classes. Include methods to do the following. i) Print the name of the PG Students who have internship in a company of user's choice ii) Print the details of research scholars who have 0 publications.	10	3	3	6

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FIRST INTERNALS

rse Code : 23CS3PCOOJ	**Course Title : Object oriented Java Programming**	
ester : III	**Maximum Marks: 40**	**Date: 05/1/24**
alty Handling the Course:	Prof. Swathi Sridharan, Prof. Shravya A R, Dr. Seema Patil, Dr.Nandhini Vineeth	

uctions: No choice in Part A and Part B. *Internal choice is provided in Part C.*

PART-A

No.	Question	Marks
.	Demonstrate Type conversion and Type casting by applying them in an appropriate example program.	5

PART-B

No.	Question	Marks

2.a.	**Analyze the output given below and write a Java program which displays the same on execution. Use constructor with inheritance.**
	`Super1 created`
	`Inside Super1 default constructor`
	`Sub1 created`
	`Inside Super1 default constructor`
	`Inside Sub1 default constructor`
	`Sub11 created`
	`Inside Super1 default constructor`
	`Inside Sub1 default constructor`
	`Inside Sub11 default constructor`
		5

2.b.	Analyze each of the program segments and determine the output of the following. Justify your answer with appropriate reason.
	`class parapassTest`
	`{ int x=10;`
	`void pass1(int xx) {x=++xx;}`
	`void pass2(parapassTest p) { p.x = x + p.x;}`
	`}`
	`class parapassTestDemo`
	`{ public static void main(String s[])`
	`{`
	`parapassTest p1=new parapassTest();`
	`System.out.println("p1.x="+p1.x);`
	`parapassTest p2=new parapassTest();`
	`int y=100; p1.pass1(y); System.out.println("p1.x="+p1.x);`
	`p1.pass2(p2); System.out.println("p1.x=" +p1.x +"p2.x=" +p2.x);`
	`}}`
		5

2.c.	**Analyze the given program, find the errors. Write the corrected program that prints the command line arguments. Underline the places where errors are corrected.** class cmdlinedemo { public static void main (String sss[]) { int x; double y; float z; System.out.println("No of command line arguments are :"+length); System.out.println("Command line arguments are:");

	for(int i=0;i<length;i++)
	{
	System.out.println(sss[i]);
	}
	System.out.println("Sum:"+(sss[0]+sss[1]+sss[2]));
	
	x=sss[0];
	y=sss[1];
	z=sss[2];
	System.out.println(x+y+z);
	}
	}

PART- C

No.	Question (CO3-PO3-Level-6)
3.a.	Create a vehicle having non-static data member registration number and price. It also includes a static data member count. Non static methods setregno( ) and getregno( ) are used to get and set the registration number and the price. A static method getVehiclecount( ) is used to return the number of vehicles in the garage. Create an array of n vehicles. Use constructor to increment the vehicle count when a vehicle is created and display a message like "Vehicle 1 created" / "Vehicle 2 created". Include a method to display the registration number of the vehicle with the highest price.
	OR
3.b.	Create a class Distance with private instance members feet and inches. Include methods to add the given two distances considering the fact that 12 inches = 1 feet and return back the resultant distance object.
4.a.	Create an abstract class **Calculate** which has three double members -say **x**, **y** and **result**. Include a method **calc**. Derive three classes from **Calculate** which performs any three arithmetic operations on the two variables **x** and **y** and assign the result to the variable **result**. Make appropriate declarations and definitions.

	OR	
	Develop a Java program to define a class Customer with the following specifications. Members : Customer_no, Customer_name, billamount and no_discountcoupons. Include a parameterized constructor to assign initial Input( ). Create two subclasses RegularCustomer Members – discount and netprice Methods – calDiscount( ) that calculates the discount of Rs.50 for every coupon held and displays the Netprice. NewCustomer Members - no exclusive members. Method - setCoupons( ) that calculate the coupons as one coupon for every Rs.500 in the billamount and sets the same for the member no_discountcoupons. Ex. If billamount is Rs.5000, 10 coupons are to be set in no_discountcoupons. Create n RegularCustomer objects and m NewCustomer objects. Set the required details and display the calculated details.	**10**