EVENING

2 7 DEC 2022

Please check that this question paper contains 9 questions and 2 printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages:]

Uni. Roll No.

Program: B.Tech. (Batch 2018 onward)

Semester: 5

Name of Subject: Programming in JAVA

Subject Code: PCIT-109

Paper ID: 16440

Scientific calculator is NotAllowed

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

1) Parts A and B are compulsory

- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

Part - A

[Marks: 02 each]

Q1.

- Explain the following methods of String class: (i) indexOf() (ii) substring().
- With the help of program discuss the concept of **static** variables.
- Implement an interface using the keyword "Interface" with code snippet. c)
- d) When can you use the **super** keyword?
- Write a program to demonstrate the concept of command line arguments. e)
- Write a program to display current date and time.

Part - B

[Marks: 04 each]

- O2. Explain the difference between constructor and method in Java with example.
- Q3. Discuss the different types of operators used in Java programming.
- Write the difference between input and output stream class with example. Q4.
- Compare method overloading and method overriding with suitable programming Q5.
- Design a program to elaborate the visibility of class and there members for different Q6. access specifier.
- Q7. Write a Java program to implement the concept of threads.

Part - C

[Marks: 12 each]

- Q8. a) Explain Static nested Classes? What is the difference between an Inner Class and a Sub-Class?
 - b) What is a singleton class? Give a practical example of its usage.

OR

What are different types of Inheritance supported by Java? Explain with examples. Why multiple Inheritance is not supported by Java? Justify in detail.

Q9. Write a program to convert a String to a List of Characters in Java programming.
Also implement the *try*, *catch* and *throw* method to handle the exception in the program.

Input: String = "JavaProgramming"

Output: [J,a,v,a,P,r,o,g,r,a,m,m,i,n,g]

OR

Design a program to join threads which allows one thread to wait until another thread completes its execution. For example "If *t* is a Thread object whose thread is currently executing, then *t.join()* will make sure that *t* is terminated before the next instruction is executed by the program". Also implement the concept of exception handling while preforming the joining operations.

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EVENING

[Total No. of Questions: 09] Uni. Roll No.

6.7 JUN 2023

[Total No. of Pages: 2]

Program: B.Tech. (Batch 2018 onward)

Semester: 5

Name of Subject: Programming in Java

Subject Code: PCIT-109

Paper ID: 16440

Scientific calculator is Not Allowed

Time Allowed: 03 Hours

Max. Marks: 60

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- 3) Any missing data may be assumed appropriately. For programs, it is expected that suitable assumptions are made and stated wherever micro-level requirement related to the code to be developed is not mentioned.

Part - A

[Marks: 02 each]

Q1

- a) What goes behind the scene when your computer runs a Java program?
- b) Compare between various iterative (loop) structures.
- c) Briefly discuss with regards to package keeping in consideration private access modifier, other package (child and non-child class) and same class.
 - d) Differentiate between applet and application.
 - e) Assume **Rectangle** is class (with two instance variables length and breadth), what do you think the following code fragment does?

Rectangle b1= new Rectangle ();

Rectangle b2=b1;

f) "Dynamic method dispatch is the mechanism by which a call to an overridden method is resolved at compile time, rather than run time". Is statement in double-quoted text correct, justify your answer.

Part – B

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[Marks: 04 each]

- Q2 With the help of program, explain the concept of type conversion.
- Q3 Explain how multiple threads can be created with example.
- Q4 How arguments passed from the console can be received in the Java program and it can be used as an input? Give example.
- Q5 Design two separate methods to swap two numbers without using a third variable with the help of a) bitwise operators b) multiplication and division operators.
- Q6 Develop a code for reading from and writing to a file.
- Q7 "String objects are immutable in Java." Justify the statement in double-quoted text with the help of a code.

Part - C

[Marks: 12 each]

- Q8 a) Compare recursion with iteration (4)
 - b) Explain constructor overloading with the help of a program. (8)

OR

- a) Compare objects with variables in terms of passing them as parameters. (4)
- b) Explain constructors in derived class with the help of a program. (8)
- Q9 Design a code to handle multiple exceptions. The code must use concept of built-in and custom exceptions. Assume suitable data and run-time cases.

OR

Design code for Java event handling by implementing ActionListener and anonymous class.

[Total No. of Questions: 09]

[Total No. of Pages: 2]

Uni. Roll No.

Program: B.Tech. (Batch 2018 onward)

Semester: 5

Name of Subject: Programming in Java

Subject Code: PCIT-109

Paper ID: 16440

Scientific calculator is Not Allowed

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1 1 MAY 2023

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

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- 3) Any missing data may be assumed appropriately

Part - A

[Marks: 02 each]

Q1.

- a) List and define the three OOPs principles.
- b) List at least two functionalities of 'super' keyword.
- c) What is the role of bitwise operators?
- d) Briefly discuss how to import packages.
- e) Assume Box is class (with two instance variables length and breadth), what do you think the following code fragment does?

Box b1 = new Box(); Box b2 = b1;

f) Justify the role of 'StingBuffer' class

Part - B

[Marks: 04 each]

- Q2. With the help of program, explain the concept of explicit conversion.
- Q3. Briefly discuss with the help of diagram phases involved in execution of a source code.
- **Q4.** With the help of a program, demonstrate command line arguments.
- Q5. "Interfaces can be extended", substantiate this statement by developing a suitable code fragment.

Page 1 of 2

P.T.O.

- Q6. Design a code to handle ArrayIndexOutOfBounds, ArithmeticException, NullPointerException exceptions. There should also be an exception handler available for any user defined exception.
- Q7. Design an applet based code to draw a bar chart for the runs scored by a cricket player in 6 one day matches.

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Part - C

[Marks: 12 each]

- Q8. a) Compare recursion with iteration.
 - b) Compare overloading with overriding.

OR

Write a menu driven code using methods to handle following:

1. Start counting from the input number incrementing the value by 1 for each iteration.

The counting stops once the current value is divisible by 10.

- 2. Find the count of factors for a given number. For example, the factors of 10 are 1,2,5,10 and count in this case is 4.
- **Q9.** a) Design code to swap two numbers without using a third variable with the help of bitwise operators.
 - b) Design a package to contain the class Student that contains data members such as name, roll number and another package contains the interface Sports which contains some sports information. Import these two packages in a package called Report which process both Student and Sport and give the report.

OR

- a) Write a program to demonstrate inter-thread communication.
- b) Design a code to handle multiple exceptions. The code must use concept of builtin and custom exceptions. Assume suitable data and run-time cases.

EVENING

[Total No. of Questions: 09] Uni. Roll No. 2 8 MAY 2024

[Total No. of Pages: 2]

Program: B.Tech. (Batch 2018 onward)

Semester: 5th

Name of Subject: Programming in Java

Subject Code: PCIT-109

Paper ID: 16440

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

1) Parts A and B are compulsory

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- 3) Any mPissing data may be assumed appropriately

Part - A

[Marks: 02 each]

Q1

- a) Explain how Java bytecode contributes to Java's platform independence.
- b) Describe the use and importance of the break and continue statements in loops.
- c) Describe how the finally block works in Java exception handling. Can it be omitted?
- d) Differentiate between synchronized methods and synchronized blocks in Java.
- e) Write a program to display current data and time.
- f) How does operator precedence affect the evaluation of an expression in Java? Give an example.

Part - B

[Marks: 04 each]

- **Q2.** Discuss how the Java Virtual Machine (JVM) executes bytecode and the role of the Just-In-Time (JIT) compiler.
- **Q3.** Describe the life cycle of a thread in Java. Explain how to create and manage multiple threads, including the use of synchronization to prevent race conditions.
- **Q4.** Explain the concept of variable scope in Java and how it affects program behavior. Provide examples of local, instance, and class variables.
- **Q5.** Compare and contrast abstraction and polymorphism, providing examples of how each is implemented in Java.
- **Q6.** Describe how thread priorities and thread synchronization can impact the behavior of a multithreaded Java application. Provide examples to support your explanation.
- **Q7.** Discuss the Java I/O system, including how Java handles input and output operations. Explain the difference between byte streams and character streams, and illustrate their usage with examples. Include reading from and writing to files.

EVENING

2 8 MAY 2024

Part - C

[Marks: 12 each]

Q8. Describe the garbage collection mechanism in Java. Explain how it works, including the different types of garbage collectors available in the JVM. Discuss the role of the finalize() method and why relying on it for resource cleanup is discouraged. Provide examples to illustrate proper resource management techniques in Java

OR

Describe the event handling mechanism in Java. Explain the delegation event model and how it is used to handle events such as mouse clicks, key presses, and window actions. Provide examples to illustrate the use of event listener interfaces and event adapter classes.

Q9. Write a Java program to demonstrate inheritance and polymorphism. Create a superclass Shape with a method draw(). Create three subclasses Circle, Rectangle, and Triangle that override the draw() method. In your main method, create an array of Shape objects and call the draw() method on each object. Show how dynamic method dispatch works in this scenario.

OR

Write a Java program to demonstrate the creation of multiple threads. Create a class MyThread that extends Thread. Override the run() method to print numbers from 1 to 5 along with the name. In the main method, create and start three MyThread instances. Use the join() method to ensure the main thread waits for all threads to complete before printing "All threads finished".

Guru Nanak Dev Engineering College, Ludhiana Department of Information Technology

Program	B.Tech (IT)	Semester	6 th
Subject Code	PCIT-109	Subject Title	Programming in JAVA
MSE No	1	Course Coordinator(s)	Er. Gitanjali
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MSE	29th September 2023	Roll Number	
Note: Attempt all questi			

Q. No.	ttempt all questions Question	COs,RBT level	Marks
Q1	State whether the following statement is true/false with justification "when a reference variable is assigned to another reference variable, another copy of object is created."	CO2, LI	2
Q2	"Write Once and Run Anywhere" - Support this statement with proper reasoning.	COI, L4	2
Q3	If a class defines several constructors, is it feasible to invoke one constructor from another constructor? Justify your answer.	CO2, L3	4
Q4	a) Rewrite the following program segment using ternary operator instead of the if-else statement. String grade; if(marks >= 90) { grade = "A"; } else if(marks >= 80) { grade = "B"; } else { grade = "C";	COI, L3	2+2 = 4
	b) How to create objects? Does Java support object destruction? Support your answer	CO2, L2	
Q5	Compare and contrast method overloading with method overriding with the help of program(s).	CO2, L4	4
Q6	Create class Date with the following capabilities: a) Output the date in multiple formats, such as MM/DD/YYYY June 14, 1992 DDD YYYY b) Use overloaded constructors to create Date objects initialized with dates of the formats in part (a). In the first case the constructor should receive three integer values. In the second case, constructor should receive a String and two integer values. In the third case, constructor should receive two integer values, the first of which represents the day number in the year.		8

Course	Outcomes (CO) Students with be able to	
1	Use primitive data types, operators and control statements to write programs	
2	Discuss methods and arrays along-with basic object oriented principles.	
3	Implement Exception handling, multithreading, string nandling, event handling, packages and interfaces	
	Government handling techniques for interaction of the user with a GUI.	
4	light/sonver applications using socket programming and database connectivity	
5	Identify and solve complex problems in the environment of Java programming.	
6	Identify and solve complex problems Higher Order Thinking Levels (LOTS) Higher Order Thinking Levels (LOTS)	

BT Classification	Lower Order	Thinking Levels (L	L3	Higher Ordo	er Thinking Le	vels (HOTS)
BT Level Number	L1	L2	Ambying	L4	L5	L6
BT Level Name	Remembering	Understanding	Аррія	Analyzing	Evaluating	Creating

		Guru Nanak Dev E	Engineering College, Ludhiana			
		Department o	Information Technology			
Progra	ım	B.Tech (IT)	Semester	5 th		
Subject	1 Code	PCIT-109	Subject Title	Programming	r in IAVA	
MSE N	No.	2	Course Coordinator(s)	Er. Gitanjali		
Max. N	Marks	24	Time Duration	1 hour 30 mi		
	f MSE	8 th November 2023	Roll Number	21045	54	
Note:	Attempt all questions					
Q. No.		Quest	ion		COs, RBT	Marks
Q1	- ancad 15 allel	12!	will you ensure that thread T2	will run after	CO3, L2	2
Q2	Differentiate between	keyword throw and throw	vs with the help of program.		CO3, L4	2
Q3			f any four methods of StringBu		CO5, L3	4
Q4	 a) Implementing runnable interface or extending thread, which method will you prefer for multithreading and why? b) Elaborate the role of thread priorities in multithreading. How do you set and get priority values for threads in java. 					(2 + 2
	your proper argument a class Exception{ public static void main(and output of program.	program. Check the program can you fix the error? If not, w	'hy not? Give		(2 + 2
	try{					
	try{					
		7/1 - 1 - 1 - 1 - 1 - 1 - 1				
		("going to divide");				
	int b=59/0;					
	} catch(Arithmet	icException e){System.ou	it.println(e);}			
	try					
	{					
	<pre>int a[]=new int[5];</pre>					
-	a[5]=4;					
	} catch(ArrayIndex	«OutOfBoundsException	e) { System.out.println(e); }			
	System.out.println("	other statement);				
	System.out.println("o } catch(Exception	other statement);				
	System.out.println("o } catch(Exception	other statement); e) {				
	System.out.println("c } catch(Exception System.out.println("F	other statement); e) { Exception handled"); }				
}	System.out.println("o } catch(Exception	other statement); e) { Exception handled"); }				

Q6			134			RALLY COLOR DE SANTA			
	area of r b) Use inhomographics subclass and Exception	two classes called Circle and Rectangle that implements an interface Shape to compute area of respective shapes. Write a Java program for the same. b) Use inheritance to create an exception superclass (called ExceptionA) and exception subclasses ExceptionB and ExceptionC, where ExceptionB inherits from ExceptionA and ExceptionC inherits from ExceptionB. Write a program to demonstrate that the catch block for type ExceptionA catches exceptions of types ExceptionB and ExceptionC.							
Course	Outcomes (Co	O) Students will be	able to		Name of the second		11.4 - 74. <u>11.5 - 11.5</u>		
1		tive data types, oper		tatements to wr	ite programs				
2	Discuss m	ethods and arrays al	ong-with basic obj	ject oriented pri	nciples.				
3		Exception handling				packages and i	nterfaces		
4	Develop e	vent handling based	components for in	teraction of the	user with a GU				
5		c based application							
	Identify at	d solve complex pro	oblems in the envir	onment of Java	programming.				
	lassification	Lower Order	Thinking Levels (LOTS)	Higher Ord	ler Thinking L			
	evel Number	LI	L2	L3	L4	L5	L	5	
RBT L	evel Name	Applying Analyzing Evaluating Creating							

Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages: 02]

Uni. Roll No. 2104.5.5.4...

Program: B.Tech. (Batch 2018 onward)

Semester: 5th

Name of Subject: Programming in Java

Subject Code: PCIT-109

Paper ID: 16440

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

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Part - A

[Marks: 02 each]

Q1.

- a) Discuss the principles of Object-Oriented Programming.
- b) How do bitwise operators differ from relational operators in Java?
- c) Compare and contrast do-while and while loops in Java with minimum two points.
- What do you mean by garbage collection? d)
- Describe the purpose and usage of break and continue statements. e)
- Elaborate the structure of Java Program. f)

Part - B

[Marks: 04 each]

- Explain the concept of bytecode in the context of Java programming. How does the use Q2. of bytecode contribute to the platform independence of Java applications?
- Explain the purpose of access specifiers in Java, citing proper programs. Q3.
- Develop a Java program that demonstrates the concept of overloading constructors. Q4.
- Combine the principles of abstraction and inheritance to illustrate how Java supports Q5. the creation of complex software systems with proper program.

- Q6. Write a Java program that demonstrates the concept of multithreading. Create two threads: one to print even numbers from 1 to 10, and the other to print odd numbers from 1 to 10.
- Q7. Design a Java program that reads an integer input from the user. Implement exception handling to ensure that the program handles scenarios where the user enters a non-integer value. If a non-integer value is entered, the program should catch the exception and display an error message, prompting the user to enter a valid integer.

Part - C [Marks: 12 each]

Q8. Explain in detail the roles and applications of the "super," "this," and "final" keywords in Java.

OR

Illustrate the thread life cycle in multithreaded programming, outlining the various stages a thread undergoes from its creation to termination. Additionally, elaborate on the concept of exception handling in Java, emphasizing the pivotal role played by try, catch, and finally blocks in effectively managing and mitigating runtime errors.

Q9. Create a Java program that converts temperature from Fahrenheit to Celsius. Prompt the user to enter the temperature in Fahrenheit and use appropriate data types for variables. Implement necessary control statements to ensure valid input. Use the formula Celsius=5/9×(Fahrenheit-32) for the conversion. Display the result with an appropriate message. Additionally, incorporate a conditional statement to inform the user if the converted temperature is below freezing (0 degrees Celsius) or above a comfortable room temperature (25 degrees Celsius).

OR

How does Java's String class facilitate efficient string handling through its various constructors, length attribute, special operations, character extraction methods, comparison mechanisms, search functionalities, and modification capabilities?

Department of Information Technology rogram B.Tech (IT) Semester 5th ubject Code PCIT-109 Subject Title Programming in Ja ISE No 2 Course Coordinator(s) Er. Gitanjali Iax. Marks 24 Time Duration I hour 30 minutes Pate of MSE Sth November 2023 Roll Number Note: Attempt all questions Q. No. Question	015	4
ubject Code PCIT-109 Subject Title Programming in Jack State of MSE Note: Attempt all questions Ouestion PCIT-109 Subject Title Programming in Jack Subject Subject Subject Title Programming in Jack Subject Title Programming in Jack Subject Subje	015	4
1SE No 2 Course Coordinator(s) Er. Gitanjali 1ax. Marks 24 Time Duration 1 hour 30 minutes Date of MSE 8th November 2023 Roll Number Note: Attempt all questions Q. No. Question Co	015	4
Time Duration 1 hour 30 minutes Oute of MSE 8th November 2023 Roll Number Note: Attempt all questions Q. No. Question Co		4
Note: Attempt all questions Q. No. Question CO		4
Note: Attempt all questions Q. No. Question CO		4
Q. No. Question CO	5, N	
	. N	
RB' leve	r	1arks
Suppose you have thread T1, T2 and T3. How will you ensure that thread T2 will run after T1 and thread T3 after T2?	, L2	2
O2 Differentiate between keyword throw and throws with the help of program.	, L4	2
With the help of program, demonstrate the use of any four methods of StringBuffer Class.		4
a) Implementing runnable interface or extending thread, which method will you prefer for multithreading and why? b) Elaborate the role of thread priorities in multithreading. How do you set and get priority values for threads in java.	, L3	2 + 2)
find out if there are any error occurs? If yes, how can you fix the error? If not, why not? Give your proper argument and output of program. class Exception{ public static void main(String args[] {		
try{		
try{	Name of the last	
System.out.println("going to divide");		
int b=59/0;		
} catch(ArithmeticException e){System.out.println(e);}		
try		
int a[]=new int[5];		
a[5]=4; } catch(ArrayIndexOutOfBoundsException e) { System.out.println(e); }		,
System.out.println("other statement);	1 1 19	
} catch(Exception e) {		
System.out.println("Exception handled"); } System.out.println("casual flow");		
System.out.println("casual flow");		

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BT Lev	el Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Crea	ung
				L3	L4	L5	Crea	
T Clas	ssification	Lower Order	Thinking Levels (LOTS)	Higher Ord	er Thinking I	Levels (1)	L6
6	Identify and	solve complex pro	blems in the envir	onment of Java	programming.		1. (1)	(OTS)
5	Create logic	based application	by the use of string	gs.			-	
4	Develop eve	ent handling based	components for in	teraction of the	user with a GUI.			
3		Exception handling					icriaces	
2	Discuss met	hods and arrays alo	ong-with basic obj	ect oriented prin	iciples.	1	terfaces	
1	Use primitiv	e data types, opera	ators and control st	atements to writ	te programs	* . L		
urse O	utcomes (CO)	Students will be	able to					
- 4	area of res b) Use inher subclasses and Excep catch blo Exception	1.0	rite a Java program n exception super ExceptionC, when om ExceptionB. VeceptionA catches	n for the same. class (called Ex re ExceptionB Vrite a progran	xceptionA) and inherits from Ex	exception aceptionA that the		

		Department of	Information Technology	Mary Mary	15			
Program	a to control	B.Tech (IT)	Semester	5 th	mail of			
Subject (PCIT-109	Subject Title	Programming	g in JAVA			
MSE No		2	Course Coordinator(s)	Er. Gitanjali		<u>.</u> - / 1.1		
Max. Ma		24	Time Duration	1 hour 30 minutes				
Date of N		8 th November 2023	Roll Number		i e	Let !		
Note: At	ttempt all questions	. Int		117	COs,	Marks		
Q. No.		Quest	ion		RBT level	-		
Q1	Suppose you have thr	ead T1, T2 and T3. How	will you ensure that thread T2	will run after	CO3, L2	2		
Q2	T1 and thread T3 after	r T2?	ws with the help of program.		CO3, L4	2		
Q2 Q3			of any four methods of StringBu	ffer Class.	CO5, L3	4		
Q4	a) Implementing run	nnable interface or extending why? e of thread priorities in mu	ing thread, which method will y	ou prefer for	CO3, L3	(2+2)		
	class Exception{					1		
	public static void mai	in(String args[] {			1997			
	try{	tln("going to divide");	out.println(e);}					
	try{ System.out.print int b=59/0; } catch(Arithm try { int a[]=new int[5] a[5]=4;	tln("going to divide"); neticException e)(System.c	•					
	try{ System.out.print int b=59/0; } catch(Arithm try { int a[]=new int[5 a[5]=4; },catch(ArrayIn	tln("going to divide"); neticException e)(System.c	out.println(e);} on e) { System.out.println(e); -1					
	try{ System.out.print int b=59/0; } catch(Arithm try { int a[]=new int[5 a[5]=4; },catch(ArrayIn System.out.printle } catch(Excepti	tln("going to divide"); neticException e) (System.c); dexOutOfBoundsException("other statement);	on e) { System.out.println(e); -1					
	try{ System.out.print int b=59/0; } catch(Arithm try { int a[]=new int[5 a[5]=4; },catch(ArrayIn System.out.printle } catch(Excepti	tln("going to divide"); neticException e) (System.c); i); idexOutOfBoundsException("other statement);	on e) { System.out.println(e); -1					
	try{ System.out.print int b=59/0; } catch(Arithm try { int a[]=new int[5 a[5]=4; },catch(ArrayIn System.out.printle } catch(Excepti	tln("going to divide"); neticException e) {System.or is]; idexOutOfBoundsException ("other statement); ion e) { n("Exception handled"); }	on e) { System.out.println(e); -1					

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Q6	b) Use inher subclasses and Exception		Rectangle that imite a Java program exception superc ExceptionC, where m ExceptionB. WeptionA catches	plements an int for the same. lass (called Exce ExceptionB in rite a program	erface Shape to ceptionA) and enherits from Ex to demonstrate	exception ceptionA that the	5, L6	4+4)
Course		Students will be a						
1		e data types, opera						
2		hods and arrays alo						
3	Implement	Exception handling	, multithreading, st	ring handling, e	vent handling, p	ackages and int	erfaces	
4	Develop ev	ent handling based	components for int	eraction of the u	iser with a GUI.			
5		based application						
6		solve complex pro			programming.			
RBT CI	assification		Thinking Levels (1		Higher Ord	er Thinking L	evels (HO	rs)
RBT Le	vel Number	Li	L2	L3	L4	L5	L	
RBT Le	vel Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	g

Sutestace Shape () 4.

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27 Class Colle Methods (1) (1)

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		Guru Nanak De	v Engineering College, Ludhi	ana			
			t of Information Technology				
Program		B.Tech.(IT)	Semester	5			
Subject (Code	PCIT-109	Subject Title		ogramming in Java		
Mid Sem	ester Test (MST)	2	Course Coordinator(s)	Er. N	leha Gupta		
No.				Lhou	r 30 minutes		
Max. Ma		24	Time Duration	1 not	ir 30 minutes		
Date of N	1ST	n.	Roll Number				
Note: Att	empt all questions		1.12		CO. DPT	Marks	
Q. No.		•	estion		COs, RBT level		
21	Briefly state the role	e of "Wrapper Cla	sses" with a suitable example.		CO4, L2	2	
21	Justify the statemen	t "Java does not su	apport multiple inheritances".		CO3, L4	2	
Q2 Q3	Justily the statement	· vara de la maria			CO1, L3,	4(2+2	
	(b)Demonstrate the	concept of packag		- b j	L4	4(2+2)	
Q4	Illustrate the life of threads.	ycle of thread. W	rite a program on how to cre	ate the	CO2, L3		
Q5 🔨	Compare method or	verloading and met	thod overriding with suitable pro	gram.	CO4, L4	4	
Q6	(a) Develop code multiple "catch" ble (b) Justify the follo mind try, catch, fin (i) "If an exce finally block for	for user-definedex ocks. owing exception hally, etc.) with the le eption has occurred	andling related statements (keep help of codes: I in try block then control flows exception handling mechanism".	oing in	CO3, L6, L4	8(4+2+2	
Course C	Outcomes (CO) will be able to		Leantral statements to write pro-	grams -			
1	Use primitive data ty	d arrays along-with	h basic object oriented principles	S		d .	
2	Discuss methods and	n handling multith	n basic object oriented principles, breading, string handling, event	handling	g, packages an	u	
3	Implement Exceptio	n nanding, martic		21.11			
	interfaces	lling techniques fo	r interaction of the user with a C	ا∪ا			
				aca conn	OCTIVIIV		
1 5	Design alient/server	applications using	socket programming and databathe the environment of Java programming	ase com	icctivity.		

RBT	Lower Order T	hinking Levels (L	OTS)	Higher Ord	ler Thinking	Levels (HOTS)
Classification RBT Level	LI	L2	L3	L4	L5	L6
Number	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Name						in the second

	Gu	ru Nanak Dev E	ngineering College, Ludhia	าต		3.4 [A.]	
-			Information Technology			-	
Program		B.Tech.(IT)	Semester	5th			
Subject Code		PCIT-109	PCIT-109 Subject Title Progra		ramming in Java		
Mid Semester Test No.		1	Course Coordinator(s)	Dr. Ma			
Max. Marks		24	Time Duration	1 hour 30 minutes			
Date of N			Roll Number				
Note: At	empt all questions						
Q. No.	Question					Marks	
Q1	What is the meaning of first line of java program "public static void main (String args[])?					2	
Q2	What is a byte code?					2	
Q3	Difference between recursion and iteration with valid program.					1+3=4	
Q4	What is the output	CO2, L3	2+2=4				
	a) int a=9;	tor the following	Java Code		184		
	float $b = a$	1/2.					
		ut.println(b);					
		(b),					
	b) byte $b = 3$	25:					
	b++:	, ,					
	b = b+1;						
	System.or	ut.println(b);			-		
Q5	Explain what ma	kes Java as platfo	rm independent language?	Told - But 18	CO3,L4	4	
Q6			s used in java programming, erator precedence in java.	Write a	CO2,L6	3+5=8	
	Outcomes (CO)						
Students	will be able to						
1	Use primitive dat	a types, operator	s and control statements to de	avalan n	**		
<u>2</u> 3	Discuss methods	and arrays along	-with basic object oriented pr	ringinlas	rograms.		
3	Implement excep	tion handling m	ultithreading, string handling	necipies			
4	Develop event ha	indling based cor	nponents for interaction of the	, раскад	ges and interfa	ices.	
5	Create logic base	d application by	the use of strings.	ie user v	vith a GUI.		
6	Identify and solve	e compley proble	ems in the environment of Ja				
	Lidentify and solve	e complex proble	and the environment of Ja	va progr	amming.		

RBT Classification		Thinking Levels	(LOTS)	Higher Order Thinking Levels (HOTS)			
RBT Level Number	LI	L2	L3	L4	L5	L6	
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	

		Gurt	Danask Dev En	gineering College, Ludhia	ทล				
			Department of I	nformation Technology					
Program	1	B.Tech	(IT)	Semester	6 th		-		_
Subject Code		PCIT-1	09	Subject Title	Pro	gramming	g in JAVA		
MSE No		1		Course Coordinator(s		Gitanjali			
Max. Marks		24		Time Duration		THE PERSON NAMED IN COLUMN TWO	ur 30 minutes		
Date of		29th Ser	otember 2023	Roll Number					
Date of	MSE								
Note: A	ttempt all questi	ons							
Q. No.	,		Questio	n			COs,RB	I Mar	(\$
		C. Hawing sto	toment is true/f	alse with justification "wh	en a r	eference	CO2, L1	2	
Q1	State whether th	ne following sta	ference variable.	another copy of object is c	eated."	,	2		40
-02	Write Once and Run Anywhere" - Support this statement with proper reasoning.						CO1, L4	2	:
92/							CO2, L3	4	1
Q3	If a class define	s several constru	ctors, is it feasib	le to invoke one constructe	or from	another	CO2, L3		
QJ	constructor? Just	tify your answer.							
- 1		211		ternary operator instead of	the if-	else	CO1, L3	2+2	= 4
29	a) Rewrite the	tollowing progra	m segment using	ternary operation					
-	statement.	nda:					- 1		
	String gra								
	grade = "							15.	
	} else if($marks >= 80$) {							
	grade = "	'B";							
	} else {								
						e.,			
	grade -	"C";				-			
	grade = '	'C";	s Java support obj	ect destruction? Support you	ır answ	er	CO2, L2		Name of Street
	60) How to cre	eate objects? Does	s Java support obj	ect destruction? Support you	r answ	er help of	CO2, L2	4	
Q5/	How to cre	eate objects? Does	s Java support obj	ect destruction? Support you	r answ	er help of	The or a public limit	4	
Q5/	How to cre	eate objects? Does	s Java support obj	ect destruction? Support you ith method overriding wit	n the	er help of	CO2, L4	8	
1	Create class Da	contrast method	overloading wing capabilities:	ith method overriding wit	n the l	er help of	The or a public limit		
Q5/ Q6	Create class Da a) Output	contrast method ite with the follow t the date in multi	overloading wing capabilities:	ith method overriding wit	the 1	er help of	CO2, L4		
1	Create class Da a) Output MM/	contrast method ite with the follow t the date in multi DD/YYYY	overloading wing capabilities:	ith method overriding wit	the 1	er help of	CO2, L4		
1	Create class Da a) Output MM/ June	contrast method ite with the follow the date in multi DD/YYYY 14, 1992	overloading wing capabilities:	ith method overriding wit	the i	neip of	CO2, L4		
1	Create class Da a) Output MM/ June DDD	contrast method ite with the follow the date in multi DD/YYYY 14, 1992	overloading wing capabilities:	as	h dates	s of the	CO2, L4		
1	Create class Da a) Output MM/ June DDD b) Use ov	contrast method ite with the follow the date in multi DD/YYYY 14, 1992 YYYY verloaded constru	wing capabilities: iple formats, such	Date objects initialized with	h dates	s of the integer	CO2, L4		
96	Create class Da a) Output MM/ June DDD b) Use of	contrast method the with the follow the date in multi DD/YYYY 14, 1992 YYYY verloaded construs s in part (a). In	wing capabilities: iple formats, such	Date objects initialized with e constructor should receive	h dates	s of the integer integer	CO2, L4		
96	Compare and program(s). Create class Da a) Output MM/ June DDD b) Use of format values. values.	contrast method the with the follow the date in multi DD/YYYY 14, 1992 YYYY verloaded constructions in part (a). In In the second In the third case	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor sho	Date objects initialized with as a seconstructor should receive a String and all receive two integer values.	h dates	s of the integer integer	CO2, L4		
96	Create class Da a) Output MM/ June DDD b) Use ov format values. which	contrast method the with the follow the date in multi DD/YYYY 14, 1992 YYYY verloaded construs in part (a). In In the second In the third case	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor y number in the y	Date objects initialized with the constructor should receive a String and all receive two integer valuear.	h dates three and two ues, the	s of the integer integer	CO2, L4		
Q6 Course	Create class Da a) Output MM/ June DDD b) Use ov format values. which	contrast method the with the follow the date in multi DD/YYYY 14, 1992 YYYY verloaded construs in part (a). In In the second In the third case	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor y number in the y	Date objects initialized with the constructor should receive a String and all receive two integer valuear.	h dates three and two ues, the	s of the integer integer	CO2, L4		
Q6 Course	Create class Da a) Output MM/ June DDD b) Use ov format values values which Outcomes (CO) Use primitive	contrast method the with the follow the date in multipolyyyyy 14, 1992 byyyy verloaded construstion in part (a). In the second In the third case represents the data types, operation of the contrast will be data types, operation in the contrast will be data types.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor sho y number in the y able to ntors and control	Date objects initialized with the constructor should receive a String and an arrangements to write program the constructed principles.	h dates e three nd two ues, the	of the integer integer first of	CO2, L4	8	
Q6 Course 1 2	Create class Da a) Output MM/ June DDD b) Use ov format values values which Outcomes (CO) Use primitive	contrast method the with the follow the date in multipol/YYYY 14, 1992 by YYYY verloaded construstion in part (a). In the second In the third case represents the data types, operation of the contrast will be data types, operation in the contrast will be data types.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor sho y number in the y able to ntors and control	Date objects initialized with the constructor should receive a String and an arrangements to write program the constructed principles.	h dates e three nd two ues, the	of the integer integer first of	CO2, L4	8	
Q6 Course	Create class Da a) Output MM/ June DDD b) Use of format values. values. which Outcomes (CO) Use primitive Discuss methology	contrast method the with the follow the date in multipolyyyy 14, 1992 byyyy verloaded constructions in part (a). In the second In the third case represents the data students will be data types, operated and arrays absception handling	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor y number in the y able to ntors and control ong-with basic ob y, multithreading,	Date objects initialized with the constructor should receive a String and a string and the constructor two integer values. Statements to write program object oriented principles. String handling, event hand	h dates e three nd two ues, the	of the integer integer first of	CO2, L4	8	
Q6 Course 1 2	Create class Da a) Output MM/ June DDD b) Use ov format values. values. which Outcomes (CO) Use primitive Discuss methol Implement Ex	contrast method the with the follow the date in multipolyyyy 14, 1992 byyyy verloaded construstion part (a). In the second In the third case represents the data types, operated and arrays also data types, operated and arrays also eeption handling the handling technologies.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor y number in the y able to ntors and control ong-with basic ob y multithreading, usues for interact	Date objects initialized with a constructor should receive a String and a string and the constructor to write program of the constructor or write program of the user with a GUI.	h dates e three nd two ues, the	s of the integer integer first of	CO2, L4	8	
Q6 Course 1 2 3	Create class Da a) Output MM/ June DDD b) Use of format values values which Outcomes (CO) Use primitive Discuss method Implement Ex Create an eve	contrast method the with the follow the date in multipolyyyy 14, 1992 yyyyy verloaded constructions in part (a). In the second In the third case represents the data types, operated and arrays also control and in the andling technologies.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor sho y number in the y able to ntors and control ong-with basic ob g, multithreading, inques for interact us using socket p	Date objects initialized with as Date objects initialized with a constructor should receive should receive a String and deceive two integer valued receive two integer valued receives to write program opject oriented principles. String handling, event hand ion of the user with a GUL regramming and database c	h dates e three nd two nes, the	s of the integer integer first of	CO2, L4	8	
Q6 1 2 3 4 5	Create class Da a) Output MM/ June DDD b) Use of format values values which Outcomes (CO) Use primitive Discuss method Implement Ex Create an eve	contrast method the with the follow the date in multipolyyyy 14, 1992 byyyy verloaded constructions in part (a). In the second In the second In the third case represents the data types, operated and arrays also deption handling technologies only experients of the data types, operated and arrays also deption handling technologies only experients of the data types, operated and arrays also deption handling technologies only experients of the data types.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor e, constructor in the y able to mators and control cong-with basic ob g, multithreading, inques for interact ns using socket p oblems in the env	Date objects initialized with a constructor should receive a String and uld receive a string and detailed or of the user with a GUL rogramming and database cironment of Java programming and database cironment of Java programming	h dates three three and two ues, the	s of the integer integer first of	CO2, L4 CO6, L6	S S S S S S S S S S S S S S S S S S S	
Q6 Course 1 2 3 4 5 6	Create class Da a) Output MM/ June DDD b) Use over format and values and values and values and values and values and values and the control of the control o	contrast method the with the follow the date in multipolyyyy 14, 1992 byyyy verloaded constructions in part (a). In the second In the second In the third case represents the data types, operated and arrays also deption handling technologies only experients of the data types, operated and arrays also deption handling technologies only experients of the data types, operated and arrays also deption handling technologies only experients of the data types.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor e, constructor in the y able to mators and control cong-with basic ob g, multithreading, inques for interact ns using socket p oblems in the env	Date objects initialized with a constructor should receive a String and uld receive a string and detailed or of the user with a GUL rogramming and database cironment of Java programming and database cironment of Java programming	h dates three three and two ues, the	of the integer integer first of eckages and vity.	CO2, L4 CO6, L6 Ind interface	es (HOTS)	
Q6 Course 1 2 3 4 5 6 RBT CI:	Create class Da a) Output MM/ June DDD b) Use of format values values which Outcomes (CO) Use primitive Discuss method Implement Ex Create an eve Design client/ Identify and so	contrast method the with the follow the date in multipolyyyy 14, 1992 yyyyy verloaded constructions in part (a). In In the second In the third cast represents the da Students will be data types, operated and arrays also ception handling technologies of the data types, operated and arrays also ception handling technologies are applicationally of the complex pro-	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, constructor sho y number in the y able to ntors and control ong-with basic ob g, multithreading, inques for interact us using socket p	Date objects initialized with a constructor should receive a String and uld receive a string and detailed or of the user with a GUL rogramming and database cironment of Java programming and database cironment of Java programming	h dates e three and two ness, the sonnections.	s of the integer integer first of	CO2, L4 CO6, L6 Ind interface	S S S S S S S S S S S S S S S S S S S	
Q6 Course 1 2 3 4 5 6 RBT CI:	Create class Da a) Output MM/ June DDD b) Use over format and values and values and values and values and values and values and the control of the control o	contrast method the with the follow the date in multipolyyyy 14, 1992 byyyy verloaded constructions in part (a). In the second In the second In the third case represents the data types, operated and arrays also deption handling technologies only experients of the data types, operated and arrays also deption handling technologies only experients of the data types, operated and arrays also deption handling technologies only experients of the data types.	wing capabilities: iple formats, such uctors to create the first case the case, constructor e, consfructor sho y number in the y able to ntors and control ong-with basic ob g, multithreading, inques for interact ns using socket p oblems in the env Thinking Levels	Date objects initialized with a constructor should receive a String and database constructed principles. Statements to write program of the user with a GUL regramming and database controlled programming and da	h dates e three and two dies, the sonnections.	of the integer integer first of eckages and vity.	CO2, L4 CO6, L6 Ind interface	es (HOTS)	