Total No. of Questions: 8]		SEAT No.:
PD4084	, j	[Total No. of Pages : 1
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[6402]-44 S.E. (Computer Engineering)

		PRINCIPLES OF PROGRAMMING LANGUA	AGES
		(2019 Pattern) (Semester - IV) (210255)	~ ~
Time	: 2	/2 Hours]	[Max. Marks: 70
Instr	ucti	ons to the candidates:	
	<i>1)</i>	Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.	
	<i>2)</i>	Neat diagrams must be drawn wherever necessary.	1-1
	3)	Figures to the right indicate full marks.	
į	<i>4)</i>	Assume suitable data, if necessary.	
01)	۵)	Evals a viby love is seeme nortable and Dynamic Whie	h af tha agracuta
<i>Q1)</i>	a)	Explain why Java is secure, portable and Dynamic Which in Java ensures these?	
	1 \		[8]
	b)	What is the String class in Java? List and explain with	
		vany four methods of the String class.	[9]
		OR	
<i>Q2</i>)	a)	Discuss the importance of garbage collection in Java.	Explain how the
		finalize() method is related to garbage collection. Diffe	erentiate garbage
		collection in Java and C++?	[8]
	b)	What do you mean by method overloading? Demon	strate through a
	,	program in Java how method overloading is used to add	_ (
		two strings respectively.	:191
() ()	۵)	Describe the constructor cell sequence in Java wh	an daaling with
<i>Q3)</i>	a)	Describe the constructor call sequence in Java who	
		inheritance. How does it differ for constructors of the subclass with proper examples?)
	1 \		[9]
	b)	What are interfaces in Java? Explain how interfaces	1 h
		implemented. Provide an example of extending interfac	eš. [9]
		OR C	
<i>Q4)</i>	a)	Discuss the types of exceptions in Java. Explain the cond	cepts of uncaught
		exceptions, try-catch blocks, throw, throws, and finally	with examples.
			[9]
	b)	Define streams in Java. Differentiate between Byte Stream	ms and Character
	,	Straams Explain the nurness of Prodefined Straams	101

Streams. Explain the purpose of Predefined Streams. [9]

Q5)	a)	Compare and contrast implementing threads using the Thread class and the Runnable interface in Java. Provide examples for both approaches.
		[8]
	b)	Introduce three popular JavaScript frameworks used in web development: ReactJS, VueJS, and AngularJS. Discuss their features and advantages.
		OR [9]
Q6)	a)	Discuss the advantages and disadvantages of using threads in Java programs. Provide examples illustrating scenarios where threads are beneficial and where they may lead to issues. [8]
	b)	Explain the role of JavaScript in creating web-based applications using Java. Provide examples of how JavaScript can be integrated with Java applications. [9]
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<i>Q7</i>)	a)	Discuss the concepts of definitions, predicates, conditionals, and scoping in Lisp. Provide code examples for each concept. [9]
	b)	Write a Lisp program to calculate the factorial of a given number using recursion. [9]
Q8)	a)	Compare and contrast the Functional Programming Paradigm and the Logic Programming Paradigm. Highlight their differences in terms of syntax, semantics, and problem-solving approaches.
	b)	Develop a Prolog program on two numbers for basic arithmetic operations
		Develop a Prolog program on two numbers for basic arithmetic operations (addition, subtraction, multiplication, division). [9]
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