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INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

II SEMESTER B.S. DEGREE EXAMINATION – NOV. 2017

SUBJECT: JAVA PROGRAMMING (CS 124)

(BRANCH: CS/CE)

Thursday, 23 November 2017

Time: 3 Hours

Max. Marks: 100

- ✓ Answer ANY FIVE full Questions.
- ✓ Missing data, if any, may be suitably assumed

- 1A(i) Explain any two key attributes of object oriented programming 4M
- (ii) Write a java program to print prime numbers from 1-100 3M
- 1B Define for each loop. Write its syntax. Using for-each loop find the sum of elements of a 1-D array. 7M
- 1C Write a program that will illustrate how constructors can be overloaded in java 6M
- 2A The ancient Japanese game Cho-Han is played with a pair of standard dice that are shaken and tossed. A player places a bet on whether the sum of the dice is 'odd'(Cho) or "even" (Han). A player wins or loses an amount equal to his/her bet
Write a class ChoHan that consists of one instance variable or field winnings, a default constructor that initializes winnings to zero and three methods 1M
- (i) Void play() that asks the player to choose odd or even and adjusts the winnings based on the outcome of the bet 2M
- (ii) A private Boolean method won(choice, sum) that determines whether or not the player has won the game 2M
- (iii) A private method reportWinnings() that displays the amount of money won or lost at the conclusion of the play 2M
- Write a test class to test the program. 1M
- 2B With the help of an example explain how the finalize method is used in java. 4M
- 2C Explain what is meant by Dynamic method dispatch. Write a working program that will illustrate how dynamic method dispatch may be achieved in java programming 8M
- 3A Write a class TwoDShape with the following
- a) Default , parameterized constructor 1M
- b) methods – getWidth(), getHeight(),setWidth(width) , setHeight(height), showDimensions() 2.5M
- c) A subclass Triangle that will invoke the constructors of the super class TwoDShape using super keyword and a method area() that will return the area after computation 1.5M
- d) A test class Shape for testing the program 1M
- 3B With the aid of sufficient explanation and proper code describe the different uses of final keyword in java 6M
- 3C Write a program that will demonstrate generic method overriding in java. 8M
- 4A With the help of a working code explain
- (i) Using interface references in java 5M
- (ii) Nested interfaces in java 6M
- 4B Describe synchronized methods with respect to multithreading in java. Write a java program that will do the following:
- a) Create a Class SumArray that includes private instance variable sum and

	synchronized method SumArray(nums[]) that sums the elements of an integer array	3M
b)	Create a class MyThread that implements the runnable interface whose run() method should call sumArray(a)	4M
c)	A test class Sync that will create two threads mt1, mt2 that will demonstrate synchronization	2M
5A	Write a program that will illustrate suspending, resuming and stopping of threads	6M
5B	Explain how protected members are accessed by packages. Justify your answer with a sample code.	6M
5C	Write a java program that uses read() to input and display the contents of a file the name of which is specified as a command line argument. Close the file using finally block	8M
6A	Using a program explain how the following work	
	(i) Static import in packages	5M
	(ii) Nested try blocks for handling exceptions	6M
6B	With the help of a sample program describe how the throws clause can be used for handling exception.	5M
6C	Write a swing program that demonstrates how to create a push button and respond to button-press events	4M
7A	Write a java program that will do the following :	
	(i) Find factorial of a number using recursion	5M
	(ii) Compare the strings String1="Standing at river's edge" and String2="Running at river's edge" starting from position 9 till the end of String1 using regionMatches()	5M
7B	Create a generic interface Containment that has a method contains() which will test if a specific item is contained or not. Write a test class to test the program for an array of integers.	7M
7C	Write a java program that will illustrate how FileWriter can be used for writing to a file	3M
8A	Write a program to illustrate compareTo() and compareToIgnoreCase() in java	6M
8B	Write an applet program that creates a thread which will scroll the message from right to left across the applet's window	7M
8C	Write a swing program to implement the working of a Stopwatch. The Stopwatch contains two push buttons and one label. The push buttons are called Start and Stop and are used to start and stop the stopwatch. The label displays the elapsed time.	7M

