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INTERNATIONAL CENTRE FOR APPLIED SCIENCES
(Manipal University)
SECOND SEMESTER B.S. DEGREE EXAMINATION – APRIL/ MAY 2017
SUBJECT: JAVA PROGRAMMING (CS 124)
(BRANCH: CS)
Wednesday, 26 April 2017

Time: 3 Hours

Max. Marks: 100

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

- 1 A) Discuss the scope and lifetime of variables with an example program. (8M)
B) Write a Java program to find the average of ten real numbers stored in an array. Use **for each** loop. (4M)
C) Where do you find the use of **static** blocks? Illustrate with an example program. (8M)
- 2 A) What do you mean by method overloading? Do the automatic type conversions have any roll in method overloading? Illustrate with an example program. (8M)
B) Distinguish between call by value and call by reference with an examples. (8M)
C) Explain the use of **finalize()** method with its general form. (4M)
- 3 A) Demonstrate the uses of **super** keyword with examples. (7M)
B) With an example program, explain method overriding. What coding benefits does method overriding provide? (8M)
C) When do you use **final** with inheritance? Describe. (5M)
- 4 A) Discuss the visibility of **protected** members within the same packages and from other packages. (5M)
B) What are interface? Can one interface extend other interfaces? If yes explain with syntax the necessity for the same. (7M)
C) Distinguish between abstract classes and interfaces. (8M)
- 5 A) What is **ArrayIndexOutOfBoundsException** exception ? Show with an example program how the **ArrayIndexOutOfBoundsException** exception is thrown and handled. (8M)
B) Explain how to throw a user defined exception in java with an example program. (8M)
C) Compare checked and unchecked exceptions. Give 2 examples for each. (4M)
- 6 A) What is multithreading? Write the differences between process based and thread based multitasking. (8M)
B) How can you synchronize access to a method in a multithreaded program? Explain with an example program. (8M)
C) How do you create a thread by extending **Thread class**? Give an example. (4M)

- 7 A) Explain *seek()* method of ***RandomAccessFile*** with its syntax (4M)
- B) Write a program to count number of characters, lines and words in a text file using character stream classes. Use finally keyword meaningfully. (8M)
- C) Explain the architecture of an Applet with the help of an Applet skeleton. (8M)
- 8 A) What are Generics? Write any three benefits of Generics. Give the general form of a generic class and the syntax for creating objects. (8M)
- B) Write a swing application to display a message "A Simple Swing Application" in a Frame. (7M)
- C) Write a note on 'The Delegation Event Model' and its advantage in Java. (5M)

