



Reg. No. 

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**MANIPAL INSTITUTE OF TECHNOLOGY, MANIPAL 576104**  
(Constituent College of Manipal University)



**THIRD SEMESTER B. Tech (IT & CCE) DEGREE END SEMESTER EXAMINATION, NOV- 2015**  
**SUBJECT: OBJECT ORIENTED PROGRAMMING -ICT2101**  
**(REVISED CREDIT SYSTEM)**

**TIME: 3 HOURS**

**26/ 11/ 2015**

**MAX. MARKS: 50**

**Instructions to candidates**

- Answer ALL questions.
- Missing data, if any, may be suitably assumed.
- All programs should be well commented.

- 1A. Write a java program that accepts marks scored by a student in five subjects into an int array through command line arguments. If length of command line argument is zero, catch the exception "NoSufficientArguments" with help of a user defined exception class called "NoSufficientArguments". If argument length is greater than five, catch ArrayIndexOutOfBoundsException. If any of the input is not an integer, then catch the IllegalArgumentException. If input's are correct, find the sum and average of five marks.
- 1B. Explain roles of following exception keywords with a single suitable example program and output.  
i)throw ii)throws iii)finally iv)try v)catch
- 1C. What is the output of the following code? Justify.  
byte x = 4; x = (byte)~x; System.out.println(x); [5+3+2]
- 2A. Write a thread to find row sum of a matrix. Using this thread, write a program to find sum of individual rows in a matrix of order m and n and print sum of individual rows and sum of all elements of the matrix.
- 2B. Distinguish between File, FileReader, FileInputStream classes. Write a program to copy every line which contains a substring as given by user from one file into other using character stream classes. Handle all the exceptions required in the program.
- 2C. Write a program to demonstrate following requirements using Vector collection class  
i. Store set of different type of objects  
ii. Delete the object which is equivalent to entered one. [5+3+2]
- 3A. Define a following functions under a package MyPack in a Bin folder:  
i. Recursive function to find the maximum element in an array  
ii. Function to sort an array element in a user required order(descending/ascending)  
Define a main program in Bin folder, which demonstrate the usage of above mentioned functions.
- 3B. Define an interface called Operations to include the following methods i)display()  
ii)append(Object a), iii)input(). Define two classes namely Itemlist and Studentlist which implements this interface. Let Item class hold itemName, price, quantity and student hold studentName, regno, gpa. Let Itemlist class store array of Item and Studentlist store array of students. Show the dynamic polymorphism by creating interface references.
- 3C. How do applets differ from an application program? Give the skeleton of applet program and explain its lifecycle methods. [5+3+2]
- 4A. Explain the following string handling functions.  
i) charAt ii) compareTo iii) lastIndexOf iv)replace v)concat
- 4B. Explain the following concepts with example: