ST. XAVIER'S COLLEGE
KOLKATA
(AUTONOMOUS)

1st SEMESTER EXAMINATION
NOVEMBER - DECEMBER 2015
M.Sc. COMPUTER SCIENCE

CMSM4157 (SET-II)

Monday & Tuesday, December 14 & 15, 2015
11:00 AM to 03:00 PM
4 hours
Full Marks : **80**

LABORATORY 2: OBJECT ORIENTED PROGRAMMING LAB

READ THESE INSTRUCTIONS FIRST:

- Of the questions attempted, the answers to only the first required number of questions (as stipulated in the question paper) will be evaluated. **So please do not attempt extra questions**.
- Use fountain pen or ball-point pen of **blue** or **black ink**.
- Answer in your own words as far as practicable.
- Do not write anything on the Question paper other than your Roll No.
- Answer each Group in a separate Answer Script.

At the end of the examination, fasten all your work securely together.

The marks are given in **brackets [ ]** at the end of each question or part question.

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So, PLEASE DO NOT ATTEMPT EXTRA QUESTIONS.

SET: II

PROGRAM CODE: 45; SAMPLE OUTPUT(S): 15; VIVA: 20

(One question to be chosen by random draw.)

1. Write a program in Java to find out the frequency of the words starting with "th", written in any case and having a length of four, present in a set of words passed as command line arguments. Also ensure that there is no repetition of any command line argument.

2. Write a Java program to do the following:
   (i) Accept a sentence as in command line.
   (ii) Display the accepted sentence.
   (iii) Input a word from the user.
   (iv) Replace each occurrence of a particular word from the accepted sentence by the newly input word.
   (v) Display the modified sentence along with the positions where modifications have been done.

3. Write a class called Book which will store different information (like book name, author name, number of edition etc.) related to the books. Save this class in a package called BookInfo. Write another class called Library which will inherit Book class and store the number of copies required for each book and book lending information. Store this class in a separate package called Lib. Perform different input/output operations on these classes.

4. Write a class called Stack which will implement different operations on a stack. Write another class called MyStack which will inherit Stack to implement different boundary checking operations on a stack through exception handling mechanisms. Show different input output operations on a stack through a menu driven approach.

5. (a) Write a program in Java to create an exception class which will throw an exception when a sentence begins with a small letter. The user will input a string which will contain multiple sentences. Execute the operation of the exception class on this input string.

   (b) Write a program in Java to do the following:
   (i) Input an integer array with few duplicate elements.
   (ii) Display the input array.
   (iii) Remove the duplicate elements.
   (iv) Display the modified array.

6. (a) Write a Java program to input an integer and check whether the integer is a prime or not. Prime checking method will throw an exception if the input number is less than the least prime number.
   (b) Write a Java program to find out the LCM of two integers.

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