Indian Institute of Technology Kharagpur

AUTUMN Semester, 2015
COMPUTER SCIENCE AND ENGINEERING

CS19001: Programming and Data Structure Laboratory

Assignment – 2

Full Marks: 10

Time allowed: 3 hours

INSTRUCTIONS: Please see the questions and write C programs step by step. Ensure proper indentations to improve the readability of your code. All these features are necessary and absence will lead to deduction of marks.
Please do not forget to upload files to *Moodle* before you leave.

Conditional Statements in C

1. Write a C program to check whether a circle can be drwan through three given points in the Cartesian plane. The user will input the coordinates of the three point, and the program will print "Circle can be dran" or "Circle cannot be drawn" depending on the values input. (3 marks)

2. Write a C program that generates a random number between 5 and 10, using the **rand()** library function whose prototype is given in the header file **stdlib.h**, and outputs 'a', 'b' , 'c' , 'd' with prob('a')=2/10, prob('b')=3/10, prob('c')=3/10 and prob('d')=2/10 respectively. Output 10 such generated numbers. DO NOT USE LOOPS. (3 marks)

3. Write a program that reads a sequence of 10 integers (which can only be 0 or 1), and counts the number of occurrences of the sequence "0100". Note that overlapped sequences are allowed. The user will input the ten integers. Your program will output the number of times the pattern occurs. DO NOT USE LOOPS. (4 marks)