EE1102 Introduction to Programming
Exam – Part 2

Submission Procedure: Upload the C program file by the due date and time. The file should be named as specified in each problem statement. Replace ROLLNO with your roll number (all small letters). **Do not upload exe files.**

Problem (40 marks including 10 marks for Q&A, Recommended Time: 25 min)

Write a C program called ROLLNO_dec2hex.c that will take as input a whole number (N>=0) and computes and prints as output the hexadecimal equivalent of the given input. In addition to the main() function, the program should have the following two functions, which will be called by the main() function, to find the hexadecimal equivalent.

1. hex_length: This function will take as input an integer number N and return the number of characters L in the hexadecimal representation of the integer input.

2. dec2hex: This function takes as input an integer number N and the number of characters L (output from the function hex_length) and outputs the hexadecimal string (not print) in a variable. The size of the string should be exactly the required number of characters required to store the hexadecimal equivalent. You should use malloc to create the required space for the string.

The main() function should take as input an integer, call the other two functions to determine the hexadecimal equivalent, and print the string with the hexadecimal equivalent. Remember to free the space allocated for the string.

You can include only stdio.h and stdlib.h libraries.