CSE104: Introduction to Computer Programming

Sample Mid Semester Exam Questions (2019)

Question 1 (3 Marks):

You have 3 identifiers a, b, c with values that are single digits (0 to 9). Write a C program or Python script to compute (and then print) the largest number that these digits (each digit used once) can define.

Question 2 (3 Marks):

You are given two locations in a cricket ground by their x and y coordinates (all measurements are in meters). Write a complete C program or a Python script to compute the distance between locations (5, 7) and (33, 43).

Question 3 (10 marks):

A ball has bounced from the ground but has begun coming down after reaching the peak. Another ball is falling above it. The balls collide. The speed of the bounced ball at the time of collision is 3 m/s. And, the speed of the other ball is 30 m/s. Write a complete C program to compute and print the speeds of the balls after the collision.

Question 4 (5 Marks):

You need 1231 candles for a celebration. Each candle costs Rs 14. However, the shop gives a candle free for every 17 paid candles. No free candle is given for a set of less than 17 candles. Write a Python command script that asks the user to input the number of candles they need. Then it prints the number of candles the user should purchase after taking note of the free candles offer. (In some cases, you will have one spare but unneeded candle!). Print your net saving due to the free candles offer (Do not count any unneeded candle as a saving.)

Question 5 (8 Marks):

You are required to write a complete C program for a problem similar to Question 4. Shop A gives a free candle for each 17 candles purchased (no free candle for less than 17 candles). Shop B gives a free candle but rounds to the nearest integer number (free 0.5 candle is rounded up) for each set of 19 candles. You need n candles, write program that recommends, where we should buy the candles? And, how many paid candles you should buy from the suggested shop?