**C Programming Practice Questions**

1. Design a program to sort a series of positive numbers in decreasing order. Prompt user for the number of numbers (maximum of twenty allowed) to be entered and then prompt for each number in turn:

How many numbers will be entered?> **7**

Enter number 1>**15**

Enter number 2>**62**

Enter number 3>**8**

Enter number 4>**59**

Enter number 5>**32**

Enter number 6>**66**

Enter number 7>**27**

The result is: 66 62 59 32 27 15 8

1. Design a student ranking program. A student has 4 subject results: Maths, English, Irish, ICT. Name and results should be input for each student, and the output should be a table with headers Name, Maths, English, Irish and Total. The results should be arranged by Total in descending order. You should use a struct to hold all the data, and prompt user for the number of students, so the program can exit the loop. Set an upper limit of 10 students. Suggested skeleton code:

typedef struct

{

char name[25];

int maths, english, irish, ict, total;

}

void main()

{

student trainees[10];

…

…

}

1. The formula for calculating annual depreciation of an item’s value is:

depreciation = (purchase\_price – salvage\_value)/years\_of\_service

Write a program to determine the salvage value of an item when purchase price, years of service and annual depreciation are given. Prompt the user for those values.

1. Write a function called exchange that interchanges two variables, x and y. Make x and y global variables. Illustrate the use of the function by calling it in a program.
2. Write a program using for loops to produce a triangle using the asterisk/star (\*) symbol. Program should prompt user for the height of the triangle and ensure the value entered is between 3 and 40 inclusive. If the user enters an invalid number, program will output an informative error message and exit. For a valid number, the program will output an equilateral triangle of height *n* where *n* is the number entered by the user. The program should use no more than 4 *printf()* statements.