IT No.………….…………………

PC No. ………………..…………

Sri Lanka Institute of Information Technology

B.Sc. Degree
in
Information Technology

Final Examination
Year 1, Semester 1 (2017)
June Intake

Introduction to Programming (C / C++) (N102)

Duration: 2 Hours

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Instructions to Candidates:

- This is an **online closed book** examination.
- This paper contains **1 question on 2 pages** without the cover page.
- Create a folder in the **Home** directory with your **IT number**.
- Save the program you write inside the folder.
- Read the question before answering.
- The total marks obtainable for this examination is 50.

Question One

(50 marks)

The "XYZ GOODS" Pvt. Ltd. manufactures spices for the export market. A sample production of machine A for Week 1 and Week 2 are shown in the following table 1 and 2 respectively. The production ranges between 50 and 300 per day.

Table 1-Machine A Production Week 1

Day	1 (MON)	2 (TUE)	3 (WED)	4 (THU)	5 (FRI)	6 (SAT)	7 (SUN)
Array *index*	0	1	2	3	4	5	6
Production	50	60	150	100	190	240	155

Table 1-Machine A Production Week 2

Day	1 (MON)	2 (TUE)	3 (WED)	4 (THU)	5 (FRI)	6 (SAT)	7 (SUN)
Array *index*	0	1	2	3	4	5	6
Production	80	65	115	170	145	95	103

(a) Write a function using C statements called *InputProduction*() which takes an integer *array* and the *size of the array* as parameters. The method should ask the user to insert production of each day (Monday to Sunday) and fill the array. The values are entered through the keyboard. (5 marks)

(b) Write a function using C statements called *MinimumDay*() which takes an integer *array* and the *size of the array* as parameters. The method should find and return the day of the lowest production (1 to 7) in the array. (5 marks)

(c) Write a function using C statements called *MaximumDay*() which takes an integer *array* and the *size of the array* as parameters. The method should find and return the day of the highest production (1 to 7) in the array. (5 marks)

(d) Write a function using C statements called *TotalProduction*() which takes an integer *array* and the *size of the array* as parameters. The method should find and return the total production of all the elements in the array. (5 marks)

(e) Write a function using C statements called *AverageProduction*() which takes an integer *array* and the *size of the array* as parameters. The method should find and return the average production of all the elements in the array. (5 marks)

(f) Write a function using C statements called *CompareProduction()* which will take three integer arrays *(array1, array2 and array3) and* the *size of the array* as parameters. The method should find the highest production of each day by comparing array1 and array2 production and store in the array3 for 7 days. (10 marks)

(g) Write a function using C statements called *DisplayProduction()* to print the production of a particular day. The function should take the integer *array*, the *size of the array* and *the day* as parameters. The function validates the input and prints the production of that day. (5 marks)

(h) Implement the main method of a C program to do the followings:

i. Create integer arrays with the names week1_production, week2_production and production_highest. The arrays are of size 7. (1 mark)

ii. Insert machine A week 1 production details to the week1_production array using the function *InputProduction()*. (1 mark)

iii. Input machine A week 2 production details to the week2_production array using the function *InputProduction()*. (1 mark)

iv. Find and print the day number which has the highest production of week 1 using the function *MaximumDay()* and *DisplayProduction()*. (1 mark)

v. Find and print the day number which has the highest production of week 2 using the function *MaximumDay()* and *DisplayProduction()*. (1 mark)

vi. Find and print the day number which has the lowest production of week 1 using the function *MinimumDay()* and *DisplayProduction()*. (1 mark)

vii. Find and print the day number which has the lowest production of week 2 using the function *MinimumDay()* and *DisplayProduction()*. (1 mark)

viii. Find and print the average production of both week 1 and week 2 using the function *AverageProduction()*. (1 mark)

ix. Find and print the total production of both week 1 and week 2 using the function *TotalProduction()*. (1 mark)

x. Find and print the highest production of each day using the function *CompareProduction()*. (1 mark)

--------------------**End of the question paper**---------------------------