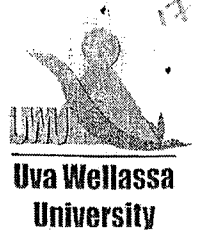


**Uva Wellassa University of Sri Lanka**  
**Faculty of Science and Technology**  
**Science and Technology Degree Program**  
**2<sup>nd</sup> Year 2<sup>nd</sup> Semester Examination – August/September 2014**  
**CST 201-1 Computer Programming Fundamentals**



Number of questions: Three (03)  
Answer all questions  
Time allocation: One (01) hour  
Total mark: 100

1.
  - a. What is the use of having short, int, and long to represent the numerical data in C? (6 mark)
  - b. List the advantages of functions in C programs. (6 mark)
  - c. Describe the difference between “if-else” and “switch” statements. (6 mark)
  - d. Explain the benefits of using an “Array” instead of separate variables. (6 mark)
  - e. Compare “integer” and “integer pointer”. (6 mark)
  
2.
  - a. Describe how do you handle a file in C language? (6 mark)
  - b. Compare syntax and semantic error with examples. (6 mark)
  - c. “A C program can be executed without a main function”. Analyze this statement. (6 mark)
  - d. Describe “pass by value” and “pass by reference” in C programming. (6 mark)
  - e. What would be the input(s), output and process to calculate the speed of a vehicle by C programming? (6 mark)
  
3.
  - a. Convert the following mathematical expressions to arithmetic expressions in C. (6X2=12 mark)
    - i. 
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
    - ii. 
$$\sqrt{a^{y+7} + b^2}$$

Hint: square root of a = sqrt(a),  
x to the power y = pow(x,y)
  - b. What is the difference between writing and appending data to a file? (8 mark)

c. Write C functions to perform the following tasks.

(10X2=20 mark)

Function name	Description
getGrade	One input parameter and return "pass" if the input parameter is between 'a' and 'd'; otherwise "fail"
getData	No input parameters and the method will ask from a user to enter name, weight, height and age. All the information will be stored in appropriate variables