Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
100 level 1st Semester Examination – Sept./Oct. 2015
CST 111-2 Introduction to Computer Science and Technology

Instructions to candidates
Duration: **Two (02) hours**
Number of questions: Four (04)
Answer all the questions
Mark allocation: **100**

1.

a. Compare high and low level computer languages (8 mark)

b. Write short note on cache memory (4 mark)

c. Differentiate volatile and non-volatile memory (6 mark)

d. Describe the uses of the following

i. Registers
ii. System softwares
iii. Bootstrap program

2.

a. Describe two usges of hexa decimal number system in real time (6 mark)

b. Convert the following (2 mark)

i. $7BD_{16}$ to Binary
ii. 23_{10} to Binary
iii. 103_{10} to Octal
iv. 239_{10} to Hexadecimal
v. 11001101_2 to Octal
vi. 1110101011_2 to Hexadecimal
vii. 147_8 to Decimal
viii. 345_8 to Binary
ix. FF_{16} to Decimal
x. 1001010011_2 to Decimal

(10 mark)

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c. Using 1's and 2's complement perform the follwowing arithmetic operations

i. 72 + (-100)
ii. (-35) + (-58) (6 mark)

3.

a. Define De Morgan's Law and prove it using a truth table (4 mark)

b. Simplify using boolean algebric laws : $\overline{A}(A + B) + (B + A\,A)(A + \overline{B})$ (3 mark)

c. Draw a truth table for $\overline{PT}(P+Z)$ (3 mark)

d. Draw a logic circuit for $\overline{(A + B)}(C + D)\overline{C}$ (3 mark)

e. Write short note on ASCII, BCD,EBCDIC and Unicode (7 mark)

f. Explain the computer programming language translators (6 mark)

4.

a. Elaborate pseudo code with an example (6 mark)

b. Draw a flowchart to find the maximum among three numbers (10 mark)

c. Explain the nessessory steps involved in Software Development Process (10 mark)

d. Write short note on following

i. Cloud Computing
ii. Wireless Sensor Network (6 mark)