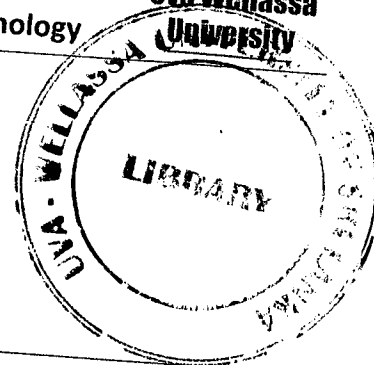




Uva Wellassa
University



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 usages 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)

c. Using 1's and 2's complement perform the following 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 algebraic laws : $\overline{A}(A+B) + (B+A)A(A+\overline{B})$

(3 mark)

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

(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 necessary steps involved in Software Development Process

(10 mark)

d. Write short note on following

i. Cloud Computing

ii. Wireless Sensor Network

(6 mark)

