



0018

Uva Wellassa University of Sri Lanka
Faculty of Applied Sciences

Department of Computer Science and Informatics
100 Level 1st Semester Examination – Jul./Aug. 2019
CST102-2 Introduction to Computer Science and Technology



Part B

Number of questions: Six (06)
Mark allocation: 30

Index Number:

1.

a. Define the term "Computer Science"? (2 mark)

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b. Specify two (02) major capabilities of a computer. (4 mark)

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2.

a. What is a software ? (2 mark)

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b. Differentiate Hardware and Software. (4 mark)

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a. Convert 531_{10} into Binary Coded Decimal (BCD).

(2 mark)

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b. Differentiate interpreter and compiler.

(3 mark)

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4. Differentiate machine language and assembly language.

(4 mark)

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5. Subtract 10100101_2 from 01110010_2 using two's complement method.

(4 mark)

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6. Draw the logic circuit for the following algebraic equation.

(5 mark)

$$Y = (\overline{AC} + BC) + (CD)A$$



Part C

Number of questions: Two (02)

Mark allocation: 50

1.
 - a. Write short notes on any two (02) selected topics from given topics below.
 - i. Application Software
 - ii. An emerging technology related to the computer field
 - iii. Central Processing Unit (CPU) (10 mark)
 - b. Simplify following sum of production boolean expression using K-map and draw the logic circuit for each simplified boolean expression.
 - i. $F = A \bar{B} C + A B \bar{C} + A B C$
 - ii. $Q = X \bar{Y} Z + X \bar{Y} \bar{Z} + \bar{X} Y \bar{Z} + \bar{X} \bar{Y} \bar{Z}$ (15 mark)
2. Develop an algorithm by writing a pseudocode in order to solve the following problems. Clearly specify the steps you follow.
 - a. For any user given two (02) strings of characters, testing whether the first string appears as a substring somewhere in the second string. (12 mark)
 - b. Finding all the factors of a positive integer. For example, in the case of the integer 12, your algorithm should report the values 1, 2, 3, 4, 6, and 12. (13 mark)

