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| Assignment N0. 01  Submission Due Date: 11th October 2023  Marks 5 |

Instructions: Discuss amongst yourselves, and if you still can’t do it, you can ask me via email or in person. Late submissions are not accepted.

[CLO 1, PLO 1, C2]

**Truth table**

When planning a party you want to know whom to invite. Among the people you would like to invite are three touchy friends. You know that if Jasmine attends, she will become unhappy if Samir is there, Samir will attend only if Kanti will be there, and Kanti will not attend unless Jasmine also does.

**Translate** the statements into compound proposition and sort the situation that which combinations of these three friends can you invite so as not to make someone unhappy?

(hint: use propositional language to translate the above statement, generate truth table. Find the combination of truth table where given conditions become true)

J: jasmine happily come

S: Samir happily come

K: kanti happily come

[CLO 2, PLO 2, C2]

Q.1)

a) Show the bitwise OR, bitwise AND, and bitwise XOR of the bit strings 0110110110 and 1100011101. Also convert these binary numbers into decimal numbers.

b) Explain how the addition of two binary numbers is carried out. Additionally, provide a logical circuit diagram for both a half adder and a full adder.