

MANIPAL UNIVERSITY JAIPUR
SCHOOL OF COMPUTING AND IT
III Semester B. Tech - Second Sessional Examination- 2017-18
Branch: CSE / IT /CCE
CS1302-Switching Theory and Logic Design
(CLOSED BOOK)

Duration: 1 hour

Max. Marks: 15

Instructions:

- All questions are compulsory.
- Missing data if any may be assumed suitably.

1. a) How does the problem of Ripple Carry Adder overcome in Carry Look Ahead Adder? [2]
 Justify with the help of Boolean equations.
 b) Draw the combination circuit to perform Binary Multiplication of a 4 bit binary number [2]
 with a 3 bit binary number.

2. a) Implement the following logic function using 4-to-16-line decoder [2]
 $F(A, B, C, D) = \sum m(0, 1, 4, 7, 12, 14, 15)$
 b) Implement the following functions using Decoder: [2]
 $F1 = (Y' + X)Z$ $F2 = Y'Z' + X'Y$

3. a) Construct a 16X1 Multiplexer using 8X1 and 2X1 Multiplexers. [2]
 b) Implement a full adder using two 4X1 Multiplexers. [2]

4. Construct a J-K Flip flop using S-R Flip Flop & Tabulate the excitation table. [3]