

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2018

B.Tech ECE VII<sup>th</sup> Semester

COURSE CODE: 12B1WEC732

MAX. MARKS:15

COURSE NAME: Digital System Design

COURSE CREDITS: 3

MAX. TIME: One Hr

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

**Q1:** Minimize by Quinev Mc Cluskey method  $f(w, x, y, z) = \Sigma(1,3,13,15) + d(8,9,10,11)$

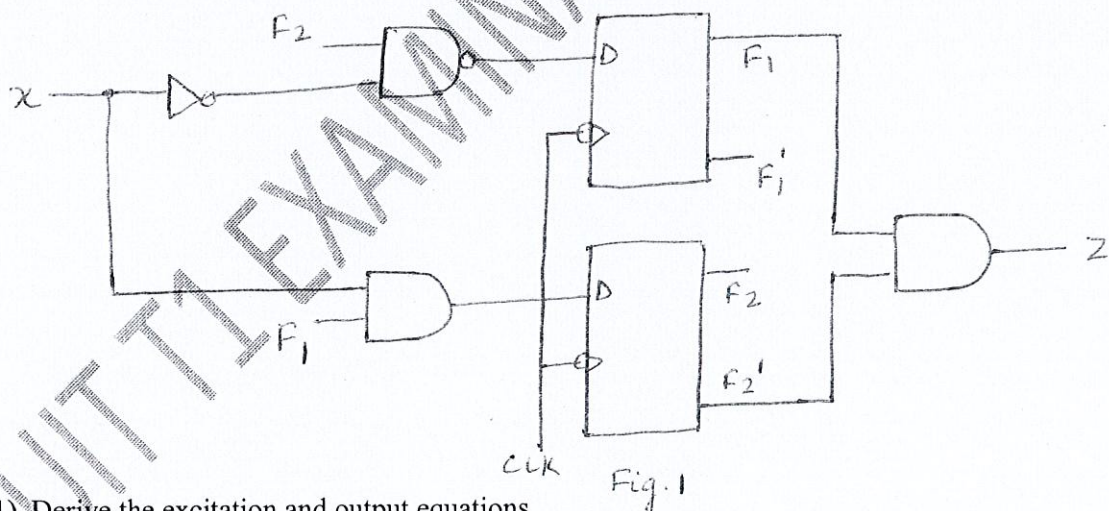
[4 Marks]

**Q2:** Design a counter with T flip flops that goes through the following binary repeated sequence: 0,1,3,7,6,4. Show that when the states 010 and 101 are considered as don't care, the counter may not operate properly. How will you correct it?

[3 Marks]

**Q3:** For the given logic diagram in Fig. 1

[1.5 x 4 = 6 Marks]



- (1) Derive the excitation and output equations
- (2) Write the next state equations
- (3) Construct the transition table
- (4) Draw the state diagram

**Q4:** Differentiate between Mealy sequential machine model and Moore sequential machine model.

[2 Marks]

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