Question Paper

MANIPAL UNIVERSITY

SCHOOL OF INFORMATION SCIENCES
FIRST SEMESTER Master of Engineering - ME (Embedded Systems)
DEGREE EXAMINATION - NOVEMBER 2017
DATE : Saturday, November 18, 2017
TIME : 10:00AM - 1:00PM
Advanced Computer Architecture [ESD 611]

Marks: 100   **Duration: 180 mins.**

Answer all the questions.

1)	Design a FSM to detect 00100100 sequence	(10)
2)	Design a FSM to detect 1100 & 0011 sequences	(10)
3)	Design a 4 stage Carry Look Ahead Circuit in terms of Carry Propagate and Carry Generate functions and also give the register level organization for a 4 bit CLA .	(10)
4)	Using Modified Booths multiplier perform multiplication 110011 * 110110 (-13 * -10)	(10)
5)	Explain 10 steps in designing control unit using hardwired approach.	(10)
6)	Explain pipeline hazards with an example.	(10)
7)	Write short notes on Superscalar processors with a neat diagram.	(10)
8)	Explain processor modes of ARM 7 and also comment on Banked registers	(10)
9)	Explain following instructions of ARM 7. a. LDM b. STM c. SWI d. MRS e. MSR	(10)
10)	With suitable block diagram explain AMBA bus organization on ARM processor.	(10)

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