

Code No: 56029

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B. Tech III Year II Semester Examinations, December-2014/January-2015

VLSI DESIGN

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

1. Discuss about the following in the fabrication of an IC:
 - a) Oxidation.
 - b) Lithography.
 - c) ION Impanation.

- 2.a) Discuss the importance of Timing delays in design of a system.
b) What are the different methods adopted in driving large capacitive loads?

- 3.a) What are the various methods used in the design of pull-ups in an inverter?
b) Design a CMOS inverter with proper figures.

- 4.a) Draw the Stick diagram for an NMOS transistor and explain.
b) Discuss $2\mu\text{m}$ CMOS design rules for wires.
c) What are the various steps involved in VLSI Design flow?

5. Discuss the various types Array memory systems available. Design Content Addressable Memory.

- 6.a) Distinguish between PAL and PLA with proper illustrations.
b) Discuss in detail the different parameters involved in the Low power Design.

- 7.a) What are the different system level techniques available? Discuss.
b) Explain the layout design for improved testability.

8. Design a 32-bit multiplier with principle of sub system design.

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