USN ☐☐☐☐☐☐☐☐☐☐

12EC130

M.Tech. Degree Examination, June / July 2014
VLSI Design Verification

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. Differentiate VLSI design verification and VLSI testing. Also describe the importance of scan based testing. **(10 Marks)**
  b. Describe the importance of design verification. Explain the formal type of verification. **(10 Marks)**

2 a. Explain the importance of functional verification also describe the different types of the functional verification. **(10 Marks)**
  b. What is the purpose of using linting tools in VLSI design verification? Illustrate with example. Also write the limitations of linting tools. **(10 Marks)**

3 a. Define functional simulation. Describe the different types of simulation method. **(10 Marks)**
  b. Explain the importance of the code coverage. Explain any one type of coverage technique. **(10 Marks)**

4 a. Describe the various levels of verification with relevant block diagram. Discuss in brief each one of the levels. **(10 Marks)**
  b. What is static timing analysis? Also define the term cross talk and noise. **(10 Marks)**

5 a. State the limitations of the static timing analysis and explain each one. **(10 Marks)**
  b. Explain the different types of parasitic extraction used in physical design. **(06 Marks)**
  c. Explain the layout rule checks used in physical design. **(04 Marks)**

6 a. Explain the concept of crosstalk glitch analysis. Explain the difference types of glitches. **(10 Marks)**
  b. Explain how cross talk delay analysis is carried out. Use relevant figures and tables to explain. **(10 Marks)**

7 a. Describe the effect of positive and negative cross talk. **(04 Marks)**
  b. Describe the different levels of design reuse can be carried out. **(06 Marks)**
  c. Explain how the integration of system on chip (SOCs) will be carried out? Illustrate with example. **(10 Marks)**

8   Write a short note on:
  a. Cost of verification.
  b. Metrics.
  c. Critical path analysis.
  d. Equivalence checking. **(20 Marks)**

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