Reg. No.

Question Paper Code : **84265**

M.E. DEGREE EXAMINATION, MAY/JUNE 2016

Elective

VLSI DESIGN

VL 7012 – MIXED SIGNAL IC TEST AND MEASUREMENTS

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Mention the importance of Forced Temperature system in mixed signal testing.

2. Differentiate characterization testing and production testing.

3. Describe briefly the methodology used to test the IC from ESD.

4. Justify the need for differential signaling and measurements.

5. Draw the general block diagram of DC multimeter.

6. Brief the operation of arbitrary waveform generator and its role in testing.

7. State Parseval's theorem and give its importance.

8. Define array processing and Digital Signal processing.

9. Mention the role of LFSR in DFT.

10. List the challenges faced by the mixed signal BIST.

PART – B (5 × 16 = 80 Marks)

11. (a) (i) List the significant features, types and application of mixed signal circuits with an example. (6)

        (ii) With a help of neat diagram explain the CMOS fabrication process in detail. (10)

OR

(b) Discuss about the scenario of real world circuits and the role of test engineer in mixed signal Integrated Circuit production. (16)

12. (a) Explain in detail about the Continuity testing and the leakage current testing techniques in mixed signal circuits. (16)

OR

(b) Describe about the DC offset measurements and power supply rejection ratio of differential circuits. (16)

13. (a) Explain the different types of DC resources used by the testers to make DC measurements. (16)

OR

(b) With the help of block diagram discuss about the AC source and measurement used for tester hardware. (16)

14. (a) Explain in detail about the types of Discrete time transforms and the windowing technique used in FFT. (16)

OR

(b) (i) Discuss about the frequency domain filtering and noise weighting in inverse FFT. (10)

        (ii) Give the advantages of DSP based testing. (6)

15. (a) Discuss about the Boundary scan procedure used to test the digital circuits and its IEEE standards. (16)

OR

(b) Explain about the Built-In-Self-Test used for testing the digital circuits. (16)

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