**No. of Printed Pages : 03** **Roll No. .....**

# AA-762

## M. Tech. EXAMINATION, May 2017

(First Semester)

(B. Scheme) (Re-appear Only)

ECE(VLSI)

MTVLSI-503

VLSI FOR OPTICAL INTERCONNECTS

*Time :* 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

**Note** : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

## Unit I

**1.** (a) Explain the construction and working of Avalanche Photodiode. **15**

(b) Discuss the properties of random binary data and its generation.

**2.** (a) Compare NRZ, RZ and Phase Encoded Data formats. **7**

(b) Discuss in detail various mechanisms responsible for dispersion in optical fiber. **8**

## Unit II

**3.** What is a trans-impedance amplifier ? Discuss the working of Feedback TIA. Also give its merits, demerits and applications in VLSI. **15**

**4.** Briefly explain the concept and significance of AM/PM conversions and output buffers. **15**

## Unit III

**5.** Describe the construction and working of LC and Ring Oscillators. Also mention their applications. **15**



**6.** Using proper schematics, explain the working of Multiplexers and modulator drivers. Also enlist their merits, demerits and applications. **15**

## Unit IV

**7.** Explain the following in detail : **15**

(i) Differentiate between optical and electrical interconnects

(ii) Role and significance of Electrical Interconnects in VLSI.

**8.** Write short notes on the following :

(i) Merits, demerits and usage of Optical Interconnects in VLSI

(ii) Applications of Electrical Interconnects. **15**