

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2744201**Date: 04/05/2016****Subject Name: SILICON ON INSULATOR****Time: 10:30 am to 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Compare SOI and CMOS technology with suitable examples and list advantages and disadvantages of both. **07**
(b) Discuss in detail: SOI Fabrication Process. **07**
- Q.2** (a) Explain in detail with necessary diagram Single Electron Transistor. **07**
(b) Explain in brief DTPT and ADTPT. **07**
- OR**
- (b) Explain in brief with necessary diagrams: SOI CPL and CSVL Circuits. **07**
- Q.3** (a) Explain in detail: SOI MTCMOS logic circuit. **07**
(b) What are the basic circuit issues for SOI circuit? Explain in detail. **07**
- OR**
- Q.3** (a) What is strong inversion Kink effect? Explain with respect to PD SOI. **07**
(b) Explain with necessary figures: Continuous Time SOI Filter. **07**
- Q.4** (a) Draw and explain the structure of SOI nMOS and pMOS. **07**
(b) Explain in brief Race Problems in SOI Dynamic Logic Circuits. **07**
- OR**
- Q.4** (a) Explain SRAM with respect to SOI. **07**
(b) Write a short note on Single stage LNA. **07**
- Q.5** (a) Discuss in brief in Noise in SOI Circuit. **07**
(b) Write a short note on PD SOI and FD SOI. **07**
- OR**
- Q.5** (a) Write a short note on DTMOS. **07**
(b) What is Back Gate Bias? Explain its effect on performance of SOI Devices. **07**
