

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-IV • EXAMINATION – SUMMER 2013

Subject Code: 744201

Date: 14-05-2013

Subject Name: Silicon on Insulator

Time: 10.30 am - 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) Draw and explain the structure of SOI nMOS and pMOS. **07**
(b) Discuss the various steps of SOI fabrication process. **07**
- Q.2** (a) Explain the effect of vertical filed on the mobility of SOI Devices. **07**
(b) What is the effect of Body Contact on PD SOI? **07**
- OR**
- (b) Write a short note on DTMOS. **07**
- Q.3** (a) Give the comparison between SOI and Bulk COMS technology. **07**
(b) Explain the use of SOI Technology in Market with suitable examples. **07**
- OR**
- Q.3** (a) Explain the basic circuit issues for SOI? **07**
(b) Explain single stage SOI Low Noise Amplifier. **07**
- Q.4** (a) What is History Effect explain with respect to SOI? **07**
(b) Explain the Short Channel Effect for SOI Devices. **07**
- OR**
- Q.4** (a) Draw and explain the 4-bit SOI flash ADC **07**
(b) Explain the Single electron transistor. **07**
- Q.5** (a) Writ a short note on PD SOI and FD SOI. **07**
(b) Explain the effect of lateral filed on the mobility of SOI Devices. **07**
- OR**
- Q.5** (a) Write a short note on SOI CPL and CSVL Circuits. **07**
(b) Explain Continuous Time SOI Filter. **07**
