

**M. TECH.-III (ELECTRONICS V.L.S.I.) (CBCS – 2015 COURSE) :  
WINTER - 2017**

**SUBJECT: SELF- STUDY PAPER-I IC FABRICATION TECHNOLOGY**

**Day: Thursday  
Date: 25/01/2018**

**Time: 11.00 AM TO 02.00 PM  
Max. Marks: 60**

**W-2017-2885**

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**N.B:**

- 1) All questions are **COMPULSORY**.
  - 2) Answers to both the sections should be written in the **SEPARATE** answer book.
  - 3) Figures to the right indicate **FULL** marks.
  - 4) Draw neat and labeled diagram **WHEREVER** necessary.
  - 5) Assume suitable data, if necessary.
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**SECTION-I**

**Q.1** Describe different steps for wafer preparation including cleaning steps? **(10)**

**OR**

Describe different etching techniques. **(10)**

**Q.2** Describe dry oxidation and wet oxidation methods. **(10)**

**OR**

Describe kinetics of silicon dioxide growth for thick films. **(10)**

**Q.3** Describe ion –beam lithography in detail. **(10)**

**OR**

Discuss electron energy deposition in matter. **(10)**

**SECTION-II**

**Q.4** Describe types of CVD reactions. **(10)**

**OR**

Describe atmospheric pressure CVD reactor used for deposition. List its advantages and disadvantages. **(10)**

**Q.5** Describe Ion-beam sputtering deposition method. **(10)**

**OR**

Describe electron-beam evaporation **(10)**

**Q.6** Describe plasma deposition reactor. **(10)**

**OR**

Describe rapid thermal CVD. **(10)**