



Enrolment No. \_\_\_\_\_

**HASMUKH GOSWAMI COLLEGE OF ENGINEERING, VAHELAL**

**MID SEMESTER EXAMINATION, SEPTEMBER-2016**

**Subject Code:2150903**

**Subject Name: Power Electronics-I**

**Time: 10:00 TO 10:50**

**Date:23/09/2016**

**Sem: 5<sup>TH</sup>**

**Total Marks: 20**

**Instructions:**

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

**QUE.1 (A) MCQ**

**1) Leakage current flows through the thyristor in**

- a) forward blocking mode                      b) reverse blocking mode  
c) both forward and reverse blocking mode   d) forward conduction mode

**2) Which triggering is the most reliable?**

- (a) Forward voltage triggering (b) Gate triggering (c)  $dV/dt$  triggering (d) Thermal triggering

**3) Snubber circuit is used with SCR**

- (a) in series (b) in parallel (c) either series or parallel (d) anti parallel

**(B) SHORT QUESTIONS**

**1) What is the necessity of connecting SCR in series?**

**2) What do you mean by commutation of SCR?**

**3) What is necessity of isolation?**

**QUE.2 (A) Discuss only construction and V-I characteristics of MOSFET.**

**(B) UJT as relaxation Oscillator.**

**OR**

**(B) Briefly explain the current ratings of SCR.**

**QUE.3 (A) Discuss only the construction and V-I characteristics of SCR.**

**(B) Draw the circuit of single phase fully controlled converter with R-L load. Derive Necessary equations and sketch output waveforms.**

**OR**

**(A) Discuss only construction and V-I characteristics of IGBT.**

**(B) Draw the circuit of single phase semi controlled bridge converter with RL load. Derive necessary equations and sketch output waveforms.**

----- **BEST LUCK** -----

