

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – 6 • EXAMINATION – SUMMER 2017

Subject Code: 361702**Date: 04/05/2017****Subject Name: Industrial Electronics and Control****Time: 10:30 AM TO 1:00 PM****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks)

- Q.1** (a) Draw circuit symbol and p-n-p-n structure of SCR, explain two transistor analogy. **07**
(b) With respect to SCRs define (1) Latching current (2) Holding current (3) Turn on time (4) Turn off time. **07**
- Q.2** (a) Explain construction, working & characteristics of DIAC with neat sketch. **07**
(b) Draw V-I characteristics of UJT, explain it with circuit diagram. **07**
OR
(b) Draw and explain SCR snubber circuit. **07**
- Q.3** (a) Enlist commutation methods of SCR, Explain class-D method. **07**
(b) Explain operation of half controlled converter with capacitive load. **07**
OR
- Q.3** (a) What is dual converter? Discuss it. State its merit & demerit. **07**
(b) Explain operation & characteristics of enhancement type MOSFET. **07**
- Q.4** (a) What is inverter? Draw and explain basic series inverter. **07**
(b) Explain mid-point step down cyclo-converter for discontinuous load. **07**
OR
- Q.4** (a) Explain operation of 1- ϕ full converter with circuit diagram and waveforms. **07**
(b) Explain IGBT with structural features and working in brief. **07**
- Q.5** (a) Explain speed control of D.C. motor using techo-generator feedback method. **07**
(b) What is resistance welding? Explain method for controlling it. **07**
OR
- Q.5** (a) Describe speed control of D.C. series motor by means of D.C. chopper. **07**
(b) Explain working of capacitor energy storage welding, list its applications. **07**
