

College of Engineering, Pune
(Sy BTech.)- (Production)
(EE 217)- (Industrial Electronics and Electrical Drives)

Date- 07/05/12

Academic Year: 20011-12

Timing: 3 hrs

Max. Marks: 50

Spring Semester

Instructions: 1) Q.1 is compulsory.

2) Attempt any three questions from the remaining.

3) Figures to the right indicate full marks

Q.1 Solve any five. (20)

- 1) Draw and explain VI characteristics for SCR and TRIAC and mention one application of each.
- 2) Explain use of OPAMP as a voltage comparator and draw input and output waveforms along with pin and circuit diagram
- 3) Explain how the materials are tested by ultrasonic method.
- 4) What is register? Explain any one type of register.
- 5) How one can rotate DC motor with AC supply? Explain its working and one application
- 6) Explain synchronous motor as a synchronous condenser.

Q.2 a) Explain half wave controlled rectifier using UJT as (5)
relaxation oscillator.

b) How speed of a DC series motor is controlled by a SCR (5)
and DIAC, explain with circuit and waveforms.

- Q.3 a) Explain any two applications of IC 555 as a monostable multivibrator (5)
- b) Write a short note on uninterrupted power supply. (5)
- Q.4 a) Explain DC drive for a separately excited DC motor along with its block diagram and armature voltage waveform. (5)
- b) write a short note on (5)
- i) Temperature Detector (any one type)
- ii) Displacement Transducer -LVDT
- Q.5 Solve any two (10)
- a) Explain working of permanent split phase single phase Induction motor(circuit diagram,phasor, characteristics and applications)
- b) Suggest suitable motor for the following applications and justify (give reason and show characteristics)
- i) cranes and lifts
- ii) Traction
- iii) rolling mills
- iv) textile industry
- v) toys and hairdryers
- c) Explain necessity of A to D converter and D to A converter in electronic systems. Explain working of successive approximation type A to D converter.