V.P & R.P.T.P. SCIENCE, V.V.NAGAR

B.Sc. (Vth SEM.) ELECTRONICS Internal Exam

DATE: 06/10/2018 **SUB: US05CELE05**

TIME: 10:00 am to 12:00 noon **MARKS-50**

Q-1 **Choose correct answer** **[08]**

1. Thyristor mainly used for_____.
   (A) Power controlling (C) Relaxation oscillation
   (B) Rectification (D) None of above
2. Recommended method to TURN-ON SCR is_____.
   (A) Triggering by A.C signal (C) Triggering by D.C signal
   (B) Triggering by pulse signal (D) None of above
3. Dc motor consists of _____.
   (A) TRIAC (C) Amplifier
   (B) Stator (D) None of above
4. Stepper motor used for _____speed variation.
   (A) Discrete (C) Linear
   (B) Constant (D) None of above
5. UJT mainly used for_____.
   (A) relaxation oscillator (C) amplification
   (B) rectification (D) None of above
6. TRIAC____ type of device.
   (A) multi-directional (C) bi-directional
   (B) uni-directional (D) None of above
7. _____ Connection of SCR used for controlling very high current.
   (A) series (C) bi-directional
   (B) parallel (D) None of above
8. _____ is a circuit which convert DC power in to AC power at desired output voltage.
   (A) Rectifier (C) Filter
   (B) Inverter (D) None of above

Q-2 **Short answer type question. (any Five)** **[10]**

1. Define string efficiency.
2. State function of gate in SCR.
3. Differentiate between semiconductor and thyristor device.
4. Differentiate between D.C. motor and stepper motor.
5. Define reverse recovery current I_{RR}.
6. List application of thyristor device.
7. Differentiate TRIAC and SCR.
8. State different type of inverter circuit.

Q.3 List the thyristor family components and Discuss principle of operation and characteristics of SCR. **[08]**

OR

Q.3 Explain different method of turning on a SCR with TURN-ON characteristics. **[08]**

Q.4 Discuss the series operation of SCR with necessary diagram and compensation circuits. **[08]**

OR

Q.4 Discuss the parallel operation of SCR with necessary diagram and compensation circuits. **[08]**

Q.5 Discuss characteristics and operation of UJT with necessary diagram. **[08]**

OR

Q.5 Discuss different triggering modes of TRIAC. **[08]**

Q.6 Draw the schematic diagram of D.C motor and discuss its working in detail. **[08]**

OR

Q.6 (a) Explain series inverter giving necessary diagram and waveforms. **[05]**

Q.6 (b) Write a brief note on stepper motor **[03]**