INDUSTRIAL ELECTRONICS

Full Marks – 100

Pass Marks – 30

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Discuss the effect of reverse recovery time in diodes. 8

   (b) Write short notes on : 4×3=12

   (i) General purpose diode

   (ii) Fast recovery diode

   (iii) Schottkey diode.

2. (a) Explain how a BJT can be used as a switch as well as an amplifier. 7

   (b) Explain the working of an N-channel enhancement mode MOSFET. 8

[Turn over

(c) What are the advantages of IGBT over BJT and MOSFET ? 5

3. (a) Explain the two transistor analogy of a thyristor. 7

(b) How thyristor can be turned off an on ? 6

(c) Explain the firing of a thyristor using UJT. 7

4. (a) Explain the working of a three phase full wave rectifier. 8

(b) What is a chopper circuit ? Explain the working of a basic chopper circuit. 7

(c) Explain the working of a buck-boost regulator. 5

5. (a) Explain the working of a basic inverter. 8

(b) How a solid state relay works ? 5

(c) How a 555 timer can be used as an astable multivibrator ? 7

6. (a) What is a transducer ? What are the different types of transducers ? Give applications of each type of transducers. 8

(b) Explain the working of a PLC. 8

(c) What are the differences between a microprocessor and a microcontroller ? 4

7. Write short notes on : 10×2=20

(a) 8051 microcontroller

(b) SIT.