



22326

12223

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

10

- (a) Draw symbol of MOSFET and LASCR.
- (b) State any application of UPS.
- (c) State difference between GTO and SCR.
- (d) State any two rating of SCR.
- (e) State difference between R and RC triggering circuit.
- (f) State any two applications of TRIAC.
- (g) State the difference between CSCR and SCR.

2. Attempt any THREE of the following :

12

- (a) Describe with neat diagram of complementary commutation.
- (b) Describe SCR operation with V-I characteristics.
- (c) Give the operation of battery charger using SCR with a neat diagram.
- (d) Compare control and uncontrolled Rectifier (any four points).



- 3. Attempt any THREE of the following : 12**
- (a) Draw and explain working of light dimmer circuit.
 - (b) Compare Symmetrical and Asymmetrical Halfly Controlled Rectifier.
 - (c) Give importance of free-wheeling diode in controlled Rectifier.
 - (d) Draw symbol and characteristics of IGBT.
- 4. Attempt any THREE of the following : 12**
- (a) Draw and describe Class A commutation.
 - (b) Draw block diagram of UPS and describe its operation.
 - (c) State triggering circuits and describe any one of them.
 - (d) Compare SCR and TRIAC (any four points).
 - (e) Draw and describe 1ϕ Bridge Controlled Rectifier in common anode connection.
- 5. Attempt any TWO of the following : 12**
- (a) Draw and explain 1ϕ midpoint controlled rectifier with Resistive load. Also draw input, output waveform of it.
 - (b) Draw synchronized UJT triggering circuit and explain its operation. Also draw waveforms.
 - (c) Draw symbol and V-I characteristics of
 - (i) TRIAC
 - (ii) DIAC
 - (iii) Power Transistor

6. Attempt any TWO of the following :

12

- (a) Draw and describe 1 ϕ fully controlled bridge with inductive load. Draw input and output waveform.
 - (b) Draw layer diagram of SCR and describe and draw Transistor analogy.
 - (c) Describe principle of SMPS with block diagram. List any two applications of SMPS.
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