Total No. of Questions : 4]

SEAT No. :

PE33

[Total No. of Pages : 1

[6579]-334
T.E. (Electrical Engineering) (Insem)
POWER ELECTRONICS
(2019 Pattern) (Semester - I) (303142)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4.***
2) ***Figures to the right indicate full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable data, if necessary.***
5) ***Use of electronic packet calculator and smith chart is allowed.***

Q1) a) Describe different protections provided to SCR against **[7]**
- i) Over voltage
- ii) Overcurrent
- iii) dv/dt
- iv) di/dt
- v) Thermal

b) Define following term with respect to SCR and show them on VI and Turn on Characteristics. **[8]**
- i) Latching Current
- ii) Holding Current
- iii) delay time
- iv) rise time

OR

Q2) a) Draw neat diagram of class D commutation and explain its working. **[7]**

b) Explain four mode operation of TRIAC. **[8]**

Q3) a) With neat constructional diagram, explain operation of MOSFET. Draw Output and transfer characteristics of MOSFET. **[7]**

b) List different voltage control techniques of chopper. Explain any two in detail. **[8]**

OR

Q4) a) A chopper circuit is operating on a TRC control mode at a frequency of 2kHz on a 230V dc supply. For output voltage of 170V, find conduction and blocking period of the step down chopper. **[7]**

b) What is four quadrants (class E) operation of chopper? Describe with diagram operation of it in each quadrant. **[8]**

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