Total No. of Questions : 4]

SEAT No. :

PC34

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T.E. (Electrical Engineering) (Insem)

POWER ELECTRONICS

(2019 Pattern) (Semester- I) (303142)

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

Instructions to the candidates:

1) ***Solve Q1 or Q2; Q3 or Q4.***
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 non-programmable calculator is allowed.***

Q1) a) Draw & explain switching characteristics of SCR. **[7]**

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

OR

Q2) a) Explain over voltage & over current protections for SCR. **[7]**

b) Define the following terms in SCR. **[8]**

i) Forward break over voltage

ii) Latching current

iii) Holding current

iv) I^2t rating

Q3) a) Draw VI characteristics of MOSFET & explain its control. **[7]**

b) Explain Class E chopper feeding RLE load in detail. **[8]**

OR

Q4) a) What is time ratio control in dc chopper? Explain the use of TRC for controlling the output voltage in choppers. **[7]**

b) Explain with a diagram step up chopper and derive the expression for the output voltage. A step up chopper with a pulse width of 150 ms is operating at 220 V dc supply. Compute the load voltage if the blocking period of the device is 40 ms. **[8]**