Reg. No. :

Question Paper Code: 91T01

M.E. DEGREE EXAMINATION, NOV 2019

First Semester

Power Electronics and Drives

19PPE101– POWER ELECTRONIC CONVERTERS

(Regulation 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain the construction, the static and switching characteristics of   CO1- U   (20)
         IGBT with neat diagrams.

                                              Or

    (b) Explain the switching characteristics of BJT and give the reason   CO1- U   (20)
         for storage time in power transistors.

2. (a) Analyze the performance of single phase half controlled converter   CO2- Ana   (20)
         with RLE load both in continuous and discontinuous mode of
         operation.

                                              Or

    (b) Analyze the performance of three phase half controlled converter   CO2- Ana   (20)
         with RLE load both in continuous and discontinuous mode of
         operation.

3. (a) Dissect the different stages of snubber circuit design for DC-DC   CO3- U   (20)
         converter.

                                              Or

    (b) Explain the modes of operation of cuk converter with necessary   CO3- U   (20)
         waveforms.

4. (a) Interpret the 180° conduction mode of operation of a three phase   CO4- U   (20)
       inverter with star connected resistive load.

                                   Or

   (b) Compare multilevel inverters and discuss some applications of   CO4- U   (20)
       multilevel inverter.

5. (a) Analyze the working of single-phase bi-directional controllers   CO5- Ana   (20)
       with R, L and R-L loads.

                                   Or

   (b) Analyze the working of three-phase bi-directional controllers   CO5- Ana   (20)
       with R, L and R-L loads.

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