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**Question Paper Code: 51003**

M.E. DEGREE EXAMINATION, NOV 2018

First Semester

Power Electronics and Drives

15PPE103 - MODERN POWER SEMI CONDUCTOR DEVICES

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain the Switching characteristics of Power Diode and its classification based on Reverse Recovery Characteristics. CO1- U (20)  
Or  
(b) Explain the characteristics and specification of an ideal power semiconductor switch. CO1- U (20)
2. (a) Explain the Switching Characteristics of BJT and give the reason for Storage Time in power Transistor. CO2- U (20)  
Or  
(b) Discuss the operation of NPN Transistor based Darlington Pair. List its Advantages and Disadvantages. CO2- U (20)
3. (a) Discuss in detail about the steady state and Dynamic State model of MOSFET. CO3- U (20)  
Or  
(b) Describe the Construction, Static and Switching characteristics of IGBT with neat diagram. CO3- U (20)

4. (a) Draw and discuss the significance, Design and applications of Snubber Circuit. CO4-U (20)

Or

- (b) With a neat circuit diagram Explain the Anti saturation control technique used for operating the base drive of a Power Transistor. CO4-U (20)

5. (a) Obtain Electrical Equivalent circuit of thermal model of Semiconductor device. CO5- Ana (20)

Or

- (b) Explain in detail the Mounting types of Power Semiconductor Devices. CO5- Ana (20)
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