

Code: 17D54101

M.Tech I Semester Regular & Supplementary Examinations January/February 2019

ADVANCED POWER SEMICONDUCTOR DEVICES

(Common to PE, PID, PEED & PED)

(For students admitted in 2017 & 2018 only)

Time: 3 hours

Max. Marks: 60

Answer all the questions

.....

- 1 Draw neatly the switching characteristics of power diode and explain.
OR
- 2 (a) Explain the self operating area of a power device with a neat diagram.
(b) Explain the EMI phenomenon due to switching. What are the different methods to reduce it?
- 3 Explain the switching characteristics of BJT and give the reason for storage time in power transistors. <http://www.jntuonline.com>
OR
- 4 Draw and explain the two transistor analogy of thyristor. Derive the expression for I_G .
- 5 (a) Elaborately explain the turn-on and turn-off process of a power MOSFET.
(b) Explain the basic principle of operation of GTO.
OR
- 6 (a) With a neat diagram explain the operation of IGBT.
(b) Write short notes on FCT (Field controlled thyristor) and MCT (MOS controlled thyristor).
- 7 Describe the over current and over voltage protection circuits for power semiconductor devices.
OR
- 8 (a) Draw and explain the functioning of gate drive circuit of a power MOSFET.
(b) Explain the principle of operation of an Opto-coupler in isolating power electronic circuits.
- 9 (a) Explain heat transfer through conduction, convection and radiation.
(b) Discuss the guidelines for the selection of heat sink.
OR
- 10 (a) Distinguish between liquid cooling and vapour phase cooling.
(b) Describe the analogues between electrical and thermal quantities.

.....

<http://www.jntuonline.com>

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से