

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : **14EE2038**
Sub. Name : **Advanced Topics in Power Electronics**

Semester : **2016-17 ODD**
Duration : **3hrs**
Max. marks : **100**

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Describe the basic structure of MOS controlled thyristor (MCT). Give its equivalent circuit and explain the turn-on and turn-off processes.	CO1	20
(OR)				
2.	a.	Explain the working of power MOSFET. Draw the steady state characteristics with neat circuit diagram.	CO1	14
	b.	Compare power MOSFET with IGBT (Write any six points).	CO1	6
3.	a.	Mention the importance of cooling of power electronic devices. Explain various methods.	CO1	20
(OR)				
4.	a.	With a neat diagram explain a driver circuit. Mention the purpose of driver circuits.	CO1	10
	b.	Explain voltage and current protection methods for power electronic devices.	CO1	10
5.	a.	With neat waveforms, explain sinusoidal pulse width modulation for inverters.	CO2	14
	b.	Write the advantages and disadvantages of cascaded inverter.	CO2	6
(OR)				
6.	a.	Explain the concept of multilevel inverters. Explain any two types.	CO2	20
7.	a.	With neat circuit diagram, explain single phase impedance source inverter.	CO1	14
	b.	Give a comparison of CSI, VSI and ZSI (Write any six points).	CO1	6
(OR)				
8.	a.	Explain the working of three phase matrix converter with the help of a neat diagram.	CO2	20
<u>Compulsory:</u>				
9.	a.	What are resonant converters? Explain with necessary circuit diagram and waveforms the operation of series resonant inverters.	CO2	20

ALL THE BEST