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 : 14EE3001
Sub. Name : POWER SEMICONDUCTOR DEVICES

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.	Compare and Contrast ideal and practical characteristics of switch	CO1	**10**
	b.	List the different types of power diodes and explain.	CO1	**10**
		(OR)		
2.	a.	Discuss the series and parallel operation of diodes	CO1	**10**
	b.	Briefly explain the control characteristics of power devices.	CO1	**10**
3.	a.	Illustrate the switching performance of BJT in detail..	CO1	**10**
	b.	Compare and Contrast PMOSFET with BJT.	CO1	**10**
		(OR)		
4.	a.	A bipolar transistor has current gain β=40.The load resistance R_C=10 Ω, dc supply voltage V_{CC}=130 V and input voltage to base circuit, V_B=10 V. For V_{CES}=1.0 V and V_{BES}=1.5V,calculate: (i)the value of R_B for operation in the saturated state (ii)the value of R_B for an overdrive factor 5 (iii)forced-current gain and (iv)power loss in the transistor for both parts(i) and (ii)	CO2	**20**
5.	a.	In detail, explain the constructional details of PMOSFET.	CO2	**15**
	b.	Compare and Contrast IGBT with PMOSFET.	CO2	**5**
		(OR)		
6.	a.	In detail, explain the constructional details of IGBT.	CO3	**15**
	b.	Compare and Contrast IGBT with BJT.	CO3	**5**
7.	a.	Explain the construction and characteristics of SIT.	CO3	**10**
	b.	Illustrate the series and parallel operation of thyristor	CO3	**10**
		(OR)		
8.	a.	Illustrate the switching characteristics of thyristor	CO3	**10**
	b.	Briefly , explain the turn on methods of thyristor.	CO3	**10**
		Compulsory:		
9.	a.	Explain the switching characteristics of GTO	CO3	**10**
	b.	Briefly explain the features of TRIAC.	CO3	**10**

ALL THE BEST