VFSTR - VADLAMUDI	Regd. No.			
	Year	Semester	Branch	Section
Staff Name: Dr. P. Srinivasa Rao	I	1	Non-Bio	26 to 46
Faculty Dept.: Physics	Course: EP	Code: 25PY101	Set-1	
Program Name: B. Tech.	Date: 18.12.25	Time: 8.00 to 9.30 AM (Each Course 30 Minutes)	M2 Pre – T1	

1. Explain the formation of the depletion region and the built-in potential in the p-n junction diode. How the depletion region width varies under forward and reverse bias conditions with neat diagrams? **(5M)**

2. a) Draw the Fermi level in p-type and n-type semiconductors and in the p-n junction diode under equilibrium. **(3M)**

   b) Assume that silicon semiconductor with a bandgap of 1.1eV is doped with Phosphorous impurity. Draw the band diagrams of the n-type semiconductors at T=0K and 300K. Assume that donor level lies below the conduction of silicon by an energy of 0.01eV **(2M)**