

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: 29.11.25			Time: 11.00 to 12.00 PM (Each Course 30 Minutes)			Pre – T1				

1. a) Explain the variation of the Fermi-Dirac distribution function at temperature  $T=0K$  and  $T>0K$  4M

b) Plot the variation of the Fermi-Dirac distribution function as a function of energy at  $T=0K$  and  $T>0K$ . 1M

2. a) Starting from the expressions of electron and hole concentrations and obtain the expression for Fermi level. 4M

b) Discuss the condition under what conditions the Fermi level lies exactly in the middle of the bandgap. 1M