

PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)
II B.Tech I Semester Supplementary Examinations, June - 2024
ELECTRONIC DEVICES AND CIRCUITS
(Common to ECE and EEE)

Max. Marks: 70

Time: 3 hours

Answer ONE Question from each Unit
 All Questions Carry Equal Marks

Q. No.	Questions	BTL	CO	Marks
UNIT – I				
1.	a) Write a short note on drift and diffusion currents.	K2	CO1	7M
	b) Explain in detail about various capacitances present in PN Diode.	K2	CO1	7M
OR				
2.	a) With neat sketches discuss the construction and operation of P-N junction diode.	K3	CO1	7M
	b) State the principle of Hall effect. Derive an expression for Hall voltage and list out the applications.	K2	CO1	7M
UNIT – II				
3.	a) Describe the basic operation of Photodiode.	K2	CO2	7M
	b) Discuss the working of LC filters with neat sketches.	K2	CO2	7M
OR				
4.	a) Give brief note on breakdown mechanisms in Zener Diode.	K3	CO2	7M
	b) Design a Full-wave rectifier with capacitor filter and explain its operation.	K3	CO2	7M
UNIT – III				
5.	a) Draw and explain input and output characteristics of CE configuration.	K4	CO3	7M
	b) Describe the operation of a depletion mode MOSFET.	K2	CO3	7M
OR				
6.	a) Explain how the transistor acts as an amplifier and draw the characteristics of transistor in Common Base configuration.	K3	CO3	7M
	b) Elaborate about punch through effect.	K2	CO3	7M
UNIT – IV				
7.	a) Outline the working principle of self-bias circuit and derive its stability factor.	K3	CO4	7M
	b) Summarize the various bias compensation techniques.	K3	CO4	7M
OR				
8.	a) Illustrate the process to draw AC and DC load lines.	K2	CO4	7M
	b) Discuss about stabilization against variations in V_{BE} and β .	K2	CO4	7M
UNIT – V				
9.	a) Give the importance of two port networks and Explain.	K2	CO5	7M
	b) Draw the small signal equivalent model of a MOSFET and explain.	K3	CO5	7M
OR				
10.	a) Analyse the CE amplifier using approximate analysis.	K4	CO5	7M
	b) Compare CE, CB and CC amplifiers.	K2	CO5	7M