Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 70028

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024
Third Semester
Information Technology
U19EC308 – ELECTRONIC DEVICES AND CIRCUITS
(Regulation 2019)

Time: Three Hours Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Why is silicon preferred over germanium in the manufacturing of semiconductor devices?	2	K2	CO1
2.	Define Drift and Diffusion Current.	2	K1	CO1
3.	Why BJT is called current controlled device?	2	K2	CO2
4.	Name different modes of operation of NPN transistor.	2	K1	CO2
5.	Why BJT is called as bipolar and FET is called as Unipolar device?	2	K1	CO3
6.	Define Pinch-off voltage in a JFET.	2	K2	CO3
7.	Define the working of Photovoltaic cell.	2	K1	CO4
8.	Draw the V-I Characteristics of tunnel diode.	2	K1	CO4
9.	What is the need of filters in power supplies?	2	K2	CO5
10.	How does ordinary rectifier differ from SCR?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No		Questions	Marks	KL	CO
11.	a)	Explain the VI characteristics of PN Junction diode under the forward and reverse bias condition with pictorial representations.	13	K2	CO1

(OR)

	b)	Explain the VI characteristics of Zener diode and how it acts as a voltage regulator under reverse bias condition.	13	K2	CO1
12.	a)	With neat diagram, explain the basic structure, symbol, construction and operation of NPN and PNP transistors.	13	K2	CO2
		(OR)			
	b)	Draw the circuit diagram of CE configuration and explain the input and output characteristics.	13	K2	CO2
13.	a)	With neat sketch explain the construction, operation and transfer characteristics of JFET.	13	K2	CO3
		(OR)			
	b)	Explain the following with relevant diagrams. i. Depletion type MOSFET. ii. Enhancement type MOSFET.	13	K2	CO3
14.	a)	Explain the construction, principle of operation & characteristics of SCR.	13	K2	CO4
		(OR)			
	b)	Explain the V-I Characteristics of following. i. Photo diode. (6) ii. LED. (7)	13	K2	CO4
15.	a)	Explain in detail the working principle of SMPS with necessary diagrams.	13	K2	CO5
		(OR)			
	b)	Explain the operation of full wave rectifier with necessary diagrams.	13	K2	CO5

PART – C

(1 x 15 = 15Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	i. With neat sketch explain the two transistor analogy model of SCR.	10	K2	CO4
		ii. Explain the V-I characteristics of SCR with relevant curves.	5	K2	CO4
		(OR)			
	b)	Draw the circuit diagram of CB amplifier and explain its Input and Output characteristics.	15	K2	CO2