

**CMR TECHNICAL CAMPUS
UGC AUTONOMOUS**

**B. Tech. III Semester Supply End Examinations, July/August-2023
Analog and Digital Electronics
Common to CSE&IT**

Time: 3 Hours

Max. Marks: 70

Note

- i. This Question paper contains Part- A and Part- B.
- ii. All the Questions in Part A are to be answered compulsorily.
- iii. All Questions from Part B are to be answered with internal choice among them.

PART-A

10 X 02 = 20 Marks

		Marks	CO	BL	
1.	a	Write diode switching times ?	2 M	CO1	L1
	b	Write Difference between Half wave & Full wave Rectifier	2 M	CO1	L2
	c	Which is the most commonly used transistor configuration? Why?	2 M	CO2	L1
	d	Write the condition for thermal runaway	2 M	CO2	L3
	e	What are the differences between JFET & BJT	2 M	CO3	L2
	f	Define drain resistance	2 M	CO3	L1
	g	Define logic gates?	2 M	CO4	L1
	h	State De Morgan's theorem.	2 M	CO4	L3
	i	What are the classifications of sequential circuits?	2 M	CO5	L2
	j	Give the comparison between combinational circuits and sequential circuits.	2 M	CO5	L1

PART-B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Explain forward bias and reverse bias in a PN junction and also VI characteristics of PN junction.	6 M	CO1	L2
	b	Explain the operation of photo diode with neat diagram	4 M	CO1	L1
OR					
3	a	Explain the operation of Half wave Rectifier with neat wave forms	6 M	CO1	L1
	b	Discuss the effect of temperature on PN junction Diode	4 M	CO1	L3
4	a	Explain the current components of a transistor	6 M	CO2	L1
	b	Explain how transistor acts as an amplifier	4 M	CO2	L2

OR

- 5 a Compare CE, CB & CC Configuration? 5 M CO2 L4
- b With neat sketch explain RC coupled amplifier 5 M CO2 L2
- 6 a With neat diagram explain the operation of TTL gates 10 M CO3 L4
- OR
- 7 a What are the applications of JFET? 6 M CO3 L3
- b Explain briefly RTL and DCTL gates 4 M CO3 L2
- 8 a Simplify the following function using K-map 10 M CO4 L5
- $f(A,B,C,D,E)=\Sigma(3,6,7,8,10,12,14,17,19,20,21,24,25,27,28)$
- OR
- 9 a Implement the following Boolean function with a multiplexer 10 M CO4 L5
- $F(A,B,C,D)=\Sigma(1, 3, 4, 11, 12, 13, 14,15)$
- 10 a Construct a JK flip flop using a D flip flop and other logic gates 5 M CO5 L6
- b With the help of Truth Table/Timing Diagram, explain 3-bit Ripple counter using JK flip-flop 5 M CO5 L6
- OR
- 11 a With the help of neat diagram, explain different Shift Registers 10 M CO5 L3

CO : Course Outcomes

BL : Bloom's Taxonomy Levels

L 1 : Remembering	L 2 : Understanding
L 3 : Applying	L 4 : Analysing
L 5 : Evaluating	L 6 : Creating
