Hall Ticket No.: ☐☐☐☐☐☐☐☐☐☐ Question Paper Code:

NARSIMHA REDDY ENGINEERING COLLEGE
(UGC-AUTONOMOUS)
B.TECH II YEAR I SEMESTER REGULAR EXAMINATIONS, FEBRUARY–2022
(Regulation: NR20)
ANALOG & DIGITAL ELECTRONICS
(Common to CSE, CSE-CS)

Time: 3 hours Max. Marks: 75

Answer any Five Questions
All Questions carry Equal Marks

		Marks	Bloom's Level
1.	a. Write a short notes on: (i) Tunnel diode, (ii) Photo diode (iii) LED (iv) Diode switching Times	8M	L2
	b. Draw the diagrams of forward and reverse bias of p-n junction diode and Explain with input and output waveforms.	7M	L2
2.	a. Explain Input Characteristics of Common Emitter transistor configuration in detail.	8M	L3
	b. Draw the circuit diagram of Common Base transistor configuration and explain.	7M	L3
3.	a. Explain JFET V-I Characteristics with neat sketches.	8M	L2
	b. Discuss the all Logic gates in detail with truth tables.	7M	L2
4.	a. Simplify the given K-map in to POS FORM $F(A,B,C,D) = \Sigma m$ (0,1,2,5,8,9,10).	8M	L4
	b. With neat sketches explain the Magnitude Comparator with one example.	7M	L2
5.	a. Explain Shift registers SISO (OR) SIPO in detail.	8M	L2
	b. Explain Ripple Counter with neat sketches in detail.	7M	L2
6.	a. Explain V-I Characteristics and effect of Temperature of p-n junction diode.	8M	L2
	b. Derive the relation between current Amplification Factor for α (Alpha) and β (Beta).	7M	L3
7.	a. Design the 4x1 Multiplixer and explain its operation with neat diagrams.	8M	L2
	b. Explain about Operating Point, Emitter Bias, and Thermal runway.	7M	L2
8.	a. Draw the block diagram of ROM and explain.	8M	L2
	b. What are the different types of clipping circuits? and brief them.	7M	L2

*****

NARSIMHA REDDY ENGINEERING COLLEGE
(UGC-AUTONOMOUS)
B.TECH II YEAR I SEMESTER SUPPLEMENTARY EXAMINATIONS, SEPTEMBER–2022
(Regulation: NR20)
ANALOG & DIGITAL ELECTRONICS
(Common to CSE, CSE-CS)

Time: 3 hours   Max. Marks: 75

Answer any Five Questions
All Questions carry Equal Marks

			Marks	Bloom's Level
1.	a.	Explain the operation of Full-wave Rectifier and also derive Efficiency and Transformer Utilization Factor for it.	8M	L2
	b.	Explain V-I Characteristics and effect of Temperature of p-n junction diode	7M	L2
2.	a.	What is BJT ? Explain junction transistor operation and how the transistor working as an amplifier?	8M	L3
	b.	Draw the circuit diagram of Common Base transistor configuration and explain.	7M	L3
3.	a.	Explain JFET V-I Characteristics with neat sketches	8M	L2
	b.	Draw the modified DTL logic circuit and explain as NOR and NAND gates	7M	L2
4.	a.	Design a 2 to 4 Decoder and explain its operation using truth table.	8M	L4
	b.	What is a Full Adder ? Explain it using Truth Table.	7M	L2
5.	a.	Write the Differences between combinational and sequential circuits	8M	L2
	b.	Explain Ripple Counter with neat sketches in detail.	7M	L2
6.	a.	Explain Half wave Rectifier and also derive expression for RMS value and Ripple factor for it.	8M	L2
	b.	Derive the relation between current Amplification Factor for α (Alpha) and β (Beta).	7M	L3
7.	a.	What is MOSFET? Draw the neat diagram of Enhancement MOSFET and explain.	8M	L2
	b.	With neat sketches explain the Magnitude Comparator with one example.	7M	L2
8.	a.	Discuss the differences between RAM and ROM.	8M	L3
	b.	How the P-N Junction diode working as a Rectifier? Explain	7M	L3

*****