



ACE Engineering College

(An Autonomous Institution)

Question Paper Code:

EE403PC

ACE-R20

Semester End Examination II B. Tech- II Semester- AUGUST -2022 DIGITAL ELECTRONICS ELECTRICAL AND ELECTRONICS ENGINEERING

Time: 3 Hours

Max. Marks: 70

H. T. No

Answer any 5 Questions out of 8 Questions from the following

Q.No	Question	Marks
1. a)	What is the importance of representing a number in compliment form? Explain different signed magnitude representations of binary numbers.	7
b)	Encode a binary word 1100 into the even parity Hamming code.	7
2. a)	Discuss the characteristics of CMOS logic.	7
b)	Design half adder and realize using only NAND gates.	7
3. a)	Implement the following Boolean expression using 3 to 8 decoder. $f(x, y, z) = x' + yz'$	7
b)	Design a 2-bit magnitude comparator.	7
4. a)	Discuss the applications of shift registers.	7
b)	Draw and explain the operation of master slave JK flip-flop.	7
5. a)	Draw and explain the operation of Johnson ring counter.	7
b)	Design a 3-bit asynchronous binary counter using T flip-flops.	7
6. a)	Explain the operation of R-2R ladder digital to analog converter.	7
b)	What are the specifications of analog to digital converters? Explain.	7
7. a)	Draw and explain the operation of counter type analog to digital converter.	7
b)	Discuss the types of memories.	7
8. a)	What are the characteristics of TTL logic? Explain.	7
b)	Draw and explain CMOS transmission gate.	7