8 DEC.2025 ELECTRICAL SEM-IV C SCHEME DE QP CODE: 10095295

Duration: 3hrs **Max Marks: 80**

Note: 1. Q. No. 1 is compulsory
2. Attempt any 3 from rest
3. Make suitable assumptions wherever required
4. Draw neat and clear diagrams
5. Write in legible handwriting
6. Figure to the right indicate full marks

1. Answer any 4 questions 20

a. Convert the binary no. 11011.011 in to equivalent decimal, octal and hexadecimal number
b. Illustrate the difference between number system and code.
c. Convert the T to SR flip flop
d. Explain 3bits digital register circuit in brief.
e. State the characteristics of the memories and classify the same
f. Explain Quantization

2. a. Explain BCD code, excess 3 code and grey code. Tabulate these three code for 4 bits binary number. Explain the concept of negative numbers in binary number system 10
b. Explain in detail TTL logic family with example with its advantages and disadvantages 10

3. a. Realize the logical f(A, B,C,D)=Σm(0,1,3,4,5,7,9,11,12,13,14) +d(2,8,10) using NAND gate after minimizing by K-map 10
b. Realize the logic circuit for BCD to excess 3 code converter 10

4. a. Explain the difference between sequential circuit and combinatinal circuit. Design a logic circuit for three input half adder and full adder. 10
b. What is a multiplexer? Explain the construction of basic 8x1 Multiplexter circuit using gates 10

5. a. Explain the working of universal shift register with the help of suitable diagram. 10
b. Explain mode 10 synchronous counter with the help of suitable diagrams. 10

6. Write short note on any two 20
a. Weighted register Digital to analog converter
b. Dual slop method of ADC
c. ROM as programmable logic device
d. Sample and Hold circuit

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