Code No: R203105K **R20** SET - 1

III B. Tech I Semester Supplementary Examinations, May/June -2024
COMPUTER ORGANIZATION AND ARCHITECTURE
(Com to EEE,ECE**)**

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I

1. a) Explain about the error detection and correction capabilities of hamming code with example [7M]
   b) Convert $(475)_8$ to its hexadecimal equivalent. [7M]

(OR)

2. a) Explain about various Boolean laws and properties. [7M]
   b) Simplify the following Boolean expression using 4 variable K-map F(A,B,C,D)=$\sum M(0,4,5,6,9,10,14,15,)$ [7M]

UNIT-II

3. a) Explain the different types complement systems with two different complement numbers for each type. using 10's complement subtract $(27352)_{10}$-$(5234)_{10}$ [7M]
   b) Design a 4x1 multiplexer and realize a 8x1 multiplexer using two 4x1 multiplexer [7M]

(OR)

4. a) Design and analyze half adder and full adder operations with neat diagram [7M]
   b) Design T Flip Flop by using JK Flip Flop [7M]

UNIT-III

5. a) What is system software and what is the use of system software? [7M]
   b) Explain the basic operational concepts of computers [7M]

(OR)

6. a) Explain the register transfer language? [7M]
   b) Classify the instructions of typical computers and explain about the logic instructions? [7M]

UNIT-IV

7. a) Explain the Design of control unit? [7M]
   b) Discuss the general register Organization? [7M]

(OR)

8. a) Explain about the addressing modes? [7M]
   b) Demonstrate the Data transfer and manipulation instructions [7M]

UNIT-V

9. a) Explain about the ROM, EPROM and EEPROM? [7M]
   b) Explain the concept of the Shift Registers and RAID? [7M]

(OR)

10. a) What are the functions of standard I/O interface and explain? [7M]
    b) Explain about the input and output processor [7M]

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