Code No: **R201216** **R20** **SET - 1**

I B. Tech II Semester Supplementary Examinations, Jan/Feb-2024
COMPUTER ORGANIZATION
(Common to CSE, IT)

Time: 3 hours Max. Marks: 70

Answer any five Questions one Question from Each Unit
All Questions Carry Equal Marks

~~~~~~

UNIT-I

1 a) Explain about various addressing modes in Assembly Language Instructions. [7M]

b) Convert the following. [7M]
i. 97710 = ( )16 ii. 65710 = ( )8
iii. 75410 = ( )2 iv. 100116 = ( )10

(OR)

2 a) Write the instruction code formats for Assembly language programs and Machine code to calculate A=B+C for two-operand and zero-operand instructions. [7M]

b) Distinguish between the write-through and write-back policies and point out merits and demerits. [7M]

UNIT-II

3 a) With suitable example explain Arithmetic Addition. [7M]

b) Explain in detail the procedure for converting one type of flip-flop into another. [7M]

(OR)

4 a) Explain in detail the procedure for converting one type of flip-flop into another by using an example of RS to JK flip-flop conversion. [7M]

b) Design and implement mod-15 ripple counter using JK flip-flops also draw its wave-forms and briefly explain its operation. [7M]

UNIT-III

5 a) Explain the micro-operations with examples. [7M]

b) Explain in detail Booth's multiplication algorithm with a neat flow chart. [7M]

(OR)

6 a) Write about Wilkes's micro programmed control unit. Give the advantages and disadvantages. [7M]

b) Derive an algorithm and draw its flowchart for the non-restoring method of fixed-point binary division. [7M]

UNIT-IV

7 a) What are the general registers associated with Central Processing Unit. Explain each register's functionality in detail. [7M]

b) With a neat sketch explain the working principles of Control memory. [7M]

|'''|'|'|''||'''||||
~~~~~~

(OR)

8 a) Draw and Explain the design diagram of the Control Unit. [7M]

b) Explain various instructions used for data manipulation and transfer with examples. [7M]

UNIT-V

9 a) With a neat sketch, explain the architecture of DMA controller. [7M]

b) Explain How Handshaking Asynchronous data transfer is advantageous over strobe control data transfer. [7M]

(OR)

10 a) Explain how logical address is converted into physical address with an example. How they are associated with main and secondary memory? [7M]

b) Explain Cache memory organization with Associative mapping. Explain how it improves the memory access time. [7M]

*****