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**B.TECH. VI SEM MAIN/BACK EXAM**

**AUGUST-2023**

**ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**(6EX3-01) - COMPUTER ARCHITECTURE  
COMMON WITH EEE & EE**

Time : 2 Hours]

[Max. Marks : 80

[Min Passing Marks :

**Instructions to Candidates :** Part – A: Short answer questions (up to 25 words)  $5 \times 2$  marks = 10 marks. All 5 questions are compulsory.

Part – B: Analytical/Problem Solving questions  $4 \times 10$  marks = 40 marks. Candidates have to answer 4 questions out of 6.

Part – C: Descriptive/Analytical/Problem Solving questions  $2 \times 15$  marks = 30 marks. Candidates have to answer 2 questions out of 3.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting materials is permitted during examination. (Mentioned in form No. 205)

1 \_\_\_\_\_

2 \_\_\_\_\_

**PART A**

- Q. 1. What do you understand by interleaved memory ? [2]  
Q. 2. Differentiate between CISC and RISC architectures. [2]  
Q. 3. What is meant by parallel processing ? [2]  
Q. 4. How does DMA work ? [2]  
Q. 5. With reference to pipelining. What is data hazards ? [2]

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## PART B

- Q. 1. Explain the design of pipelined instruction units. [10]
- Q. 2. Discuss Flynn's classification fo computer architectures with diagrams. [10]
- Q. 3. What are different pipeline hazards ? Explain each pipeline hazards. [10]
- Q. 4. What is DMA ? Explain DMA mode of data transfer using a suitable block diagram.  
Give an example where DMA mode of data transfer is useful. [10]
- Q. 5. Expalin in brief different addressing modes of 80 × 86 microprocessor. [10]
- Q. 6. Differentiate between multiprocessor and multi-computer systems using neatly labelled schematic diagram. Compare their relative advantages. [10]

## PART C

- Q. 1. Explain the architecture of a basic computer with suitable diagram. [15]
- Q. 2. What do you mean by virtual memory ? Discuss, how paging helps in implementing virtual memory ? [15]
- Q. 3. Describe in detail the Architectural details and features of a DSP processor. [15]

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