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B. E. (Fifth Semester) Examination, April-May 2020

(Old Course)

(IT Engg. Branch)

COMPUTER ORGANIZATION and ARCHITECTURE

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note :   *Attempt all questions. Part (a) of each question is compulsory and carries 2 marks each. Attempt any **two** parts from (b), (c) and (d) and carries 7 marks each.*

Unit-I

1. (a) Define MBR.   2

    (b) Write down the difference between computer organization and computer architecture in detail.   7

(c) Explain the addressing modes in detail. 7

(d) Elaborate machine language milestanes in computer architecture in detail. 7

Unit-II

2. (a) What is bias in floating point representation? 2

(b) Explain hardware implementation and Hardware Algorithm in detail. 7

(c) Explain the Booth's multiplication algorithm in detail. 7

(d) Explain the addition and subtraction with signed 2's complement data with proper example. 7

Unit-III

3. (a) What is Bit Slicing? 2

(b) Write down difference between Hardwired Control Unit and Micro-programmed Control Unit. 7

(c) Discuss the address sequencing in detail. 7

(d) Explain the concept of control memory in detail. 7

Unit-IV

4. (a) What is Memory Hierarchy? 2

(b) What is Cache Memory? Explain it's working principles in detail. 7

(c) Explain the concept of memory address mapping of ROM and RAM chip. 7

(d) Explain the concept of virtual memory with diagram and example. 7

Unit-V

5. (a) What is dynamic interconnection network? 2

(b) Explain the concept of I/O instruction and I/O interfacing in detail. 7

(c) What is DMA? Explain the concept of DMA and it's type. 7

(d) Write short notes on : (any **two**) 7

   (i) Crossbas switch

   (ii) Multiport memory

   (iii) Multistage network