

BTS(C) – IV – 09 – 014 – C

B. Tech Degree IV Semester Examination, April 2009**CS 403 COMPUTER ARCHITECTURE AND ORGANISATION***(2006 Scheme:)*

Time : 3 Hours

Maximum Marks : 100

PART- A

(8 x 5 = 40)

- I. (a) Define and explain the usages of Assembler directives.
 (b) Write a note on stacks. What is its usage during program execution.
 (c) Write and explain the booth algorithm with the help of an example.
 (d) Describe different steps of operations the processor has to perform to execute an instruction.
 (e) Write a note on virtual memory.
 (f) Write the features of asynchronous DRAM.
 (g) Write a note on distributed arbitration.
 (h) Give the key characteristics of USB.

PART- B

(4 x 15 = 60)

- II. (a) Describe any '3' addressing modes that can be used in array manipulation. (7)
 (b) Describe various operations to be performed while calling a subroutine. (8)
- OR**
- III. (a) Write a note on Straight line sequencing. (5)
 (b) Compare the features of Single address, two address and three address instructions. (3)
 (c) Explain the basic operational concepts for executing a typical instruction.
 ADD KICA, Ro
 This instruction adds the operand at memory location LOCA to the operand in register Ro in the processor. (7)
- OR**
- IV. (a) Draw the block diagram and explain the operation of a 4 bit carry look ahead adder. (7)
 (b) Explain the Fast multiplication algorithm of 'Bit pair Recoding of multiplier'. (8)
- OR**
- V. Draw the basic organisation of a Micro programmed Control unit. Also explain the detailed operation of micro programmed control unit. (15)
- VI. (a) Describe the read and write operations in static memories. (7)
 (b) Describe different types of memory interleaving. Compare and contrast its features. (8)
- OR**
- VII. Describe the use of Cache memory. Explain in detail, various Cache mapping functions. (15)
- VIII. (a) Explain various methods to handle multiple simultaneous interrupt requests. (7)
 (b) Describe the detailed operation of a DMA in a computer system. (8)
- OR**
- IX. (a) Compare and contrast the features of Synchronous and Asynchronous Bus. (7)
 (b) Write a short note on PCI Bus and SCSI Bus. (8)

