

II B. Tech II Semester Regular Examinations, April/May - 2016
COMPUTER ORGANIZATION
(Com. to CSE, IT, ECC)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

1. a) Discuss about floating point representation (4M)
- b) Explain about Binary adder-subtractor. (4M)
- c) What is LIFO? Discuss. (4M)
- d) What is BCD subtraction? Discuss. (3M)
- e) Define page fault and page replacement? (4M)
- f) Differentiate between full duplex and half duplex communication. (3M)

**PART -B**

2. a) Discuss about the error detection using parity bit code with examples (8M)
- b) What is fixed point Representation? Explain with examples. (8M)
3. a) What is instruction format? Discuss about the registers of basic computers. (8M)
- b) Discuss about the arithmetic logic shift unit with examples. (8M)
4. a) Give the block diagram for register set in CPU. (8M)
- b) What is address sequencing? Discuss. (8M)
5. a) How addition and subtraction is done for decimal numbers? Give the pictorial representation for adding two decimal numbers. (8M)
- b) Discuss about Booth's multiplication algorithm (8M)
6. a) Discuss about the virtual memory? Discuss about the mapping of virtual address to memory table. (8M)
- b) Discuss about set-associative mapping. (8M)
7. a) Discuss about parallel priority interrupt. (8M)
- b) Why does DMA have priority over the CPU When both request a memory transfer? (8M)



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**PART -A**

1. a) Discuss about BCD with examples. (3M)
- b) Differentiate between hardwired control and micro programmed control (4M)
- c) What is Reverse polish notation? Give examples. (4M)
- d) What is BCD Adder? Discuss. (4M)
- e) Discuss about bootstrap loader. (3M)
- f) What is asynchronous serial transfer? Discuss. (4M)

**PART -B**

2. a) Obtain the 9's compliment of the following eight-digit decimal numbers: (4M)  
 12349876; 00980100; 90009951 and 00000000
- b) Perform the subtraction with the following unsigned decimal numbers by taking (12M)  
 the 10's complement of the subtrahend  
 i) 5250-1321      ii) 1753-8640      iii) 20-100      iv) 1200-250
3. a) Explain about shift micro operations with examples. (8M)
- b) Write a short notes on Arithmetic micro operations. (8M)
4. Discuss about different CPU organizations with examples. (16M)
5. a) Explain how multiplication is done for floating point numbers with flow chart. (8M)
- b) Discuss about Booth's multiplication algorithm (8M)
6. a) Define Auxiliary memory? Discuss with neat diagrams. (8M)
- b) Explain about the procedure for mapping the virtual address in memory table. (8M)
7. a) What is priority interrupt? Discuss about daisy chaining priority interrupt. (8M)
- b) What is DMA? Explain with examples. (8M)



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**PART -A**

1. a) What is two's complement? Give examples (3M)
- b) What is Register Transfer? Discuss. (4M)
- c) Discuss about RISC instruction. (4M)
- d) What is Divide overflow? Discuss. (3M)
- e) Discuss about direct mapping. (4M)
- f) What is asynchronous data transfer? Discuss. (4M)

**PART -B**

2. a) Obtain the 10's complement of the following eight-digit decimal numbers: (4M)  
123900; 090657; 100000 and 000000
- b) Perform the subtraction with the following unsigned binary numbers by taking (12M)  
the 2's complement of the subtrahend  
i) 11010-10000    ii) 11010-1101    iii) 100-110000    iv) 1010100-1010100
3. a) Write the function table for arithmetic circuit? Discuss (8M)
- b) Design a 4-bit combinational circuit decremter using 4 full adder circuits. (8M)
4. What is addressing modes? Discuss about different addressing modes with (16M)  
examples.
5. a) Give flow chart for doing decimal division and also explain the sequence of (8M)  
operation of it.
- b) Explain how multiplication is done for floating point numbers with flow chart. (8M)
6. a) What is associate memory? Explain with block diagram. (8M)
- b) Discuss about the mapping procedures of cache memory. (8M)
7. How the data transfer to and from peripherals is done? Discuss with neat (16M)  
diagrams and examples.



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**PART -A**

1. a) What is one's compliment? Give examples (3M)
- b) Discuss about Three state bus buffers. (4M)
- c) What is relative addressing mode? Give example. (4M)
- d) Explain Array multiplier. (4M)
- e) What is address space and memory space? Discuss. (4M)
- f) What is interrupted I/O? Discuss. (3M)

**PART -B**

2. a) Explain the functional units of a CPU. (8M)
- b) Explain Hamming code with example. (8M)
3. a) What is Register Transfer language? Discuss about the Register transfer with symbols and examples. (8M)
- b) What is Binary Adder? Discuss and also draw the 4-bit Binary adder? (8M)
4. How computer instructions are classified? List and explain about them with examples. (16M)
5. a) Discuss about Booth's multiplication algorithm (8M)
- b) Explain about the addition and subtraction for the floating point numbers with flow chart. (8M)
6. a) Discuss about Associative mapping with example. (8M)
- b) Discuss about the address mapping done by the paging. (8M)
7. a) What is handshaking? Discuss with neat diagrams. (8M)
- b) Draw the block diagram for asynchronous communication interface. (8M)

