4. a) Discuss the function of index register, memory address register(MAR), memory buffer register (MBR).

   b) Discuss the role of the timing and control unit of a computer. 6+4=10

5. a) Draw the Booths algorithm flow chart and explain with an example.

   b) Explain the role of interrupts in Computer Organization. 8+2=10

6. a) Draw a neat block diagram of memory hierarchy in a computer system. Compare the parameters size, speed and cost per bit in the hierarchy.

   b) Differentiate between SRAM and DRAM. 6+4=10

7. a) Draw the block diagram of a DMA controller and explain its functioning?

   b) What do you understand by the term peripheral? Explain with some examples. 5+5=10

8. a) Define Pipelining. Explain different type of Pipelining.

   b) Explain Vector (Array) Processing. Write few Applications of Vector Processors. (1+4)+(3+2)=10

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B. Tech Odd Semester Examination, February, 2023

Electronics & Communication Engineering

(5th Semester)

Course No.: ECE-503

(Computer Architecture)

Full Marks: 50

Pass Marks: 25

Time: 2 hours

Note:
1. Attempt any five questions.
2. Begin each answer in a new page.
3. Answer parts of a question at a place.
4. Assume reasonable data wherever required.
5. The figures in the right margin indicate full marks for the question.
6. All the mathematical symbols and abbreviations have their usual meanings.

1. a) Discuss various types of addressing modes which are usually provided in a microprocessor.

   b) Give suitable examples, suppose a computer have 1 processor, 1 disk, 1 printer and one application program is running on it. With suitable diagram explain how these operations can be executed. 5+5=10

2. a) Draw 4-bit arithmetic circuit and explain the micro operations with arithmetic circuit function table.

   b) Explain with Block diagram and logic diagram 2- bit by 2-bit Array Multiplier 6+4=10

3. What is an ER diagram? What are the uses of ER diagrams? How to Draw ER Diagrams. Write the Benefits of ER diagrams. 2+4+2+2=10