

Mid-West University
Examinations Management Office
Semester End Examinations 2081

Bachelor level/ B.E. Computer/ 5th Semester

Time: 3 hours

Subject: Computer Organization and Architecture (CO454/CO514)

Full Marks: 50

Pass Marks: 25

- *Attempt all the questions*
- *Figures in the margin indicate full marks.*
- *Assume suitable values, with a stipulation, if necessary.*
- *Candidates are required to answer the questions in their own words as far as possible.*

1. a) Define Computer organization. Draw the instruction cycle state diagram. [2+2]
b) Define addressing modes. Mention the different types of addressing modes and comparison between them. [1+4]
2. a) Explain the Booth's algorithm for multiplication. Perform 7X5 using booth multiplication algorithm. [2+3]
b) Explain the block diagram of hardware implementation of control unit. [3]
3. a) Why is micro-programmed control unit more flexible as compared to hardware control unit? Explain the micro-Programme sequencing technique used in control memory. [2+3]
b) Why input-output processor is necessary in input-output organization? Explain about DMA control with necessary diagram. [2+3]
4. a) How CPU communicate with IOP explain with necessary diagram. [3]
b) Explain cache organization and cache mapping techniques with example. [4]
5. a) Define optical memory and write down its advantages and disadvantages. [4]
b) Explain FCFS scheduling algorithm with necessary example. [3]
6. a) Explain the concept of virtual memory implementation by using demand paging. [3]
b) Explain Arithmetic pipeline and instruction pipeline. Write down the difference between RISC and SISC. [4+2]

The End