Second Year/ Third Semester

Subject : Computer Architecture **FM : 80**
Time : 3 hours **PM : 32**

Candidates are required to give their answers in their own words as for s practicable.
The figures in the margin indicate full marks.

Year: 2066

Section A
Long answer question

Attempt any two questions: (2 x 10 = 20)

1. Explain the different types of addressing modes and compare each other.
2. What are the major differentiating between I/O bus & Interface modules? What are the advantage & disadvantages of each?
3. What are the three possible modes to transfer the data to & from peripherals? Explain.

Section B
Short Questions:

Attempt any ten questions :(10 x 6 = 60)

4. Differentiate between parity checker & parity generator.
5. What do you mean by shift micro-operations? Explain.
6. Explain the computer instructions with example.
7. Mention the types of interrupt with example.
8. What do you mean by field decoding? Explain.
9. Write down the following equation in three address, two address & one address instruction. Y = AB + (C * D) + E (F/G)
10. Explain the characteristics of RISC & CISC.
11. Explain the booth Algorithm with example.
12. What is the main function of DMA? Mention the three possible DNA configurations.
13. What are the different types of I/O commands? Explain.
14. Differentiate between associative page table & page replacement.
15. Write short notes on the following:
    a) Memory space b) Address space

Year: 2067

Section A
Long answer question

Attempt any two questions: (2 x 10 = 20)

1. Explain the Microprogram sequencer with examples.
2. Explain with example of Data manipulation instructions.
3. Explain the non restoring Division algorithm, flowchart Hardware Implementation with example.

Section B

Short Questions:

Attempt any ten questions :(10 x 6 = 60)

4. What do you mean by Instruction format? Explain.
5. Differentiate between Hardwired &Microprogram control unit.
6. What do you mean by logic microoperations?
7. Differentiate between direct & indirect addressing modes.
8. Explain with example of Data transfer instructions.
9. What is the major difference between RISC & CISC architecture?
10. Explain the subtraction algorithm with signed 2's complement.
11. Differentiate between isolated I/O & Memory Mapped I/O.
12. What is DMA transfer? Explain.
13. What is the role of input-output processor (IOP) in computer system? Explain.
14. What is the memory management hardware? Explain.
15. Write short notes on the following:

a. Sequential memory hierarchy
b. Random memory hierarchy

Year: 2068

Section A

Long answer question

Attempt any two questions: (2 x 10 = 20)

1. Explain the restoring division algorithm with example.
2. What do you mean by I/O interface? Explain the I/O bus and interface module.
3. What do you mean by memory organization? Explain the memory management hardware with example.

Section B

Short Questions:

Attempt any ten questions :(10 x 6 = 60)

4. Explain the error detection code with example.
5. Differentiate between logic microoperation and shift microperations.
6. Explain the I/O instruction with example.
7. What do you mean by memory mapping? Explain.
8. What do you mean by control memory? Explain the microinstructions and microoperation format.
9. What do you mean by addressing modes? Differentiate between indexed addressing modes and base register addressing mode.
10. Explain the Booth algorithm. Multiple 3*5 using booth algorithm.
11. Differentiate between isolate and memory mapped I/O.
12. Explain the I/O processor with block diagram.
13. Explain data transfer instruction with example.
14. Differentiate between RISC and CISC processor.
15. Write short notes on the following:
    a) Interrupt cycle
    b) DMA