QUESTION BANK

COMPUTER ORGANISATION AND ARCHITECTURE (KCA-105)

CO1

1) Differentiate between single bus and double bus structure.
2) Define system bus. Write different bus arbitration methods.
3) List and explain different addressing modes with suitable examples.
4) Explain the functional units of computer system.
5) What is stack organization? Compare register stack and memory stack.
6) Explain the different type of buses.
7) Multiply (-14) and (9) using booth's algorithm. Give flowchart of the process.
8) Explain the addressing modes.
9) Write short notes on:
   i. Arithmetic and Logic Unit
   ii. Control Unit
   iii. Input/Output
10) What is Bus Arbitration. Give one scheme to implement bus arbitration.

CO2

1) What is carry look ahead adder?
2) Q.7 Explain the booth's algorithm in depth with the help of flow chart. Give an example for multiplication using booth's algorithm.
3) Q.8 Define IEEE standard for floating point numbers.
4) Q.9 What is addition and subtraction algorithm? Explain with example.
5) Q.10 Multiply (-7) and (+3) using Booth's algorithm. Register size is 5.
6) What is meant by instruction? Explain instruction set Architecture? Give examples.
7) Perform the 2's complement subtraction of smaller number(101011) from larger number(111001).
8) Draw a diagram to implement manual multiplication algorithm.
9) How floating point addition is implemented. Explain briefly with a neat diagram.
10) Define carry propagation delay.

CO3

1) Define Data path.
2) Define Latency and throughput.
3) Draw and explain typical hardware control unit.
4) Draw and explain about micro program control unit.
5) What is a data register and address register?
6) What is Pipelining?
7) Explain the four basic types of operations that need to be supported by an instruction set?
8) Define conditional code/ status registers in computer organization?
9) Explain a procedure to handle an interrupt?

10) Differentiate the following
    a) Microprogrammed control unit vs hardwired control unit
    b) Horizontal vs vertical microprogramming
    c) Parallelism vs pipelining
    d) External vs internal interrupt

CO4

1) What is Memory system? Give classification of memory.
2) Define cache.
3) What is SRAM and DRAM?
4) What is address translation page fault routine, page fault and demand paging?
5) What are the enhancements used in the memory management?
6) Define the term LRU and LFU.
7) List the advantages of write through cache.
8) Explain load and store architecture in microprocessor?
9) Distinguish between a synchronous and an asynchronous data transfer mechanisms?
10) Differentiate synchronous and asynchronous communication?

CO5

1) What is DMA?
2) List out the types of interrupts. Discuss file access mechanisms.
3) What is the need for DMA transfer?
4) List down the functions performed by an Input/Output unit.
5) What is I/O control method?
6) Distinguish between memory mapped I/O and I/O mapped I/O?
7) Discuss how DMA have priority over the CPU while memory transfer in CPU?
8) Discuss memory mapped I/O in computer organization?
9) Explain different hazards in pipeline concept while an instruction is transferd?
10) Explain the following
    a) Cycle stealing
    b) Vectored vs Non vectored interrupt
    c) Priority interrupt