**ST.JOSEPH COLLEGE OF ENGINEERING**

 **COMPUTER ARCHITECTURE- CS6303**

 **QUESTION BANK**

 **UNIT-1**

 **2 MARKS**

1. State Moore’s Law
2. Define addressing mode. What are the various addressing modes?
3. What are the eight ideas used for designing a computer
4. Define Response time or Execution Time
5. Define Throughput.
6. What is computer architecture?
7. What do you mean by power wall?
8. List various instruction formats with example.
9. Differentiate direct and indirect addressing modes?
10. What is register indirect addressing mode? When it is used?
11. What is auto increment and auto decrement addressing modes?
12. What is immediate addressing mode?
13. What is mean by stored program concept?
14. Name the functional units of a computer?
15. What does the term hertz refers to?
16. Define SPEC rating?
17. State and explain the basic performance equation?
18. What is relative addressing mode? When it is used?
19. State the advantages of multiprocessor systems
20. What are the logical and control operations?

 **16 MARKS**

1. Discuss the Eight Ideas in Computer Design
2. Explain in detail about the technologies used for building processors and memory
3. What the Components of a computer system. Elaborate each component in detail
4. What are addressing modes? Explain the various addressing modes with example?
5. Explain the various types of instruction in detail.
6. (i)Write a short note on power wall.

 (ii)Why Uniprocessors are changed to Multiprocessors? Discuss the reason in detail.

1. Explain in detail about the various control operations.
2. How to measure and report the performance of the systems.
3. Explain about the various logical operations.
4. What is an Instruction? Discuss the various operands and operations of the computer hardware.

 **UNIT-2**

 **2MARKS**

1. Draw the half adder circuit?
2. Write the logic equations of a binary half adder.
3. Draw the symbolic representation of the full adder and give the expression for the sum.
4. Draw a full adder circuit and give the truth table.
5. Draw the full adder circuit using two half adders.
6. What is a ripple carry adder?
7. Define overflow rule in addition?
8. What is the disadvantage in using a ripple carry adder?
9. How do you ascertain an adder as “fast”?
10. Discuss the principle behind the Booth’s multiplier.
11. Draw the format of floating point number.
12. Define IEEE floating point single and double precision standard?
13. In conforming to the IEEE standard mention any four situations under which a processor sets exception flag.
14. Define underflow and overflow.
15. What do you mean by sub word parallelism
16. What are the two attractive features of Booth algorithm
17. What are the two techniques for speeding up the multiplication operation?
18. What is called Guard Bits?
19. List out the rules for add/sub of floating point number.
20. Represent 32.75 and 18.125 in single precision IEEE 754 representation.

 **16 MARKS**

1. Explain ALU in detail.
2. Explain sub word parallelism.
3. Explain in detail the principle of carry –look-ahead adder.
4. How floating point addition is implemented? Explain briefly with neat diagram.
5. Describe the algorithm for division with suitable example?
6. Explain floating point operation in detail?
7. (a) Explain IEEE 754 floating point representation

(b) Show the IEEE 754 binary representation of the number $0.75\_{10}$ in single and double precision

1. Explain the steps for Floating Point Multiplication with neat diagram and suitable example.
2. Perform floating point addition using the numbers 0.5 and 0.4375 use the floating point addition algorithm.
3. Explain addition and subtraction operation in detail with examples.

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