QUESTION BANK

MODULE -1

1. State Amdahl's law and its significance…(4)
2. Describe in detail the three types of shared memory multi-processor model ..(5)
3. Explain in detail the operational model of SIMD Supercomputer.. (5)
4. With the help of neat diagram explain the evolution of computer architecture (5)
5. Write a shot note on Flynn's Classification … (5)
6. Write a shot note on the following
   i. CPI
   ii. CPU time
   iii. (c) Memory cycle …..(3)

7. Differentiate between Implicit parallelism and explicit parallelism (4)

8. Consider the execution of an object code with 200,000 instruction on a 40 MHz processor. The program consist of four major types of instructions. The instruction mix and the number of cycles (CPI) needed for the instruction type are given below based on the result of program trace experiment

Instruction type	**CPI**	**Instruction Mix**
Integer arithmetic	1	60%
Data transfer	2	18%
Floating point	4	12%
Control transfer	8	10%

(a) Calculate the avg CPI when the program is executed on a uni processor with the above trace result

(b) Calculate the corresponding MIPS rate base on CPI obtained in (a)

(c) Find the execution time of the object code on this processor **------- (5)**

9. A benchmark program is run on a 40MHz. The executed program consist of 100,000 instruction executions with the following instruction mix and clock cycl count

Instruction type	**Instruction Count**	**CPI**
Integer arithmetic	45,000	1
Data transfer	32,000	2
Floating point	15,000	2
Control transfer	8,000	2

Determine (a) Effective CPI
(b) MIPS rate
(c) Execution time for this program **------- (5)**

10. Explain Parallelism. What are the various conditions of parallelism …(5)

11. What are the architectural development track?...(5)

MODULE -2

1. Explain the concept of Instruction pipeline (3)
2. Differentiate between Complex instruction set and Reduced Instruction Set (5)
3. Write a short note on RISC Scalar Processors (4)
4. Write a short note on CISC Scalar Processors (4)
5. With the help of neat diagram explain memory hierarchy (5)
6. With the help of neat diagram Superscalar processor (4)
7. Explain the concept of inclusion Property (3)