**UNIT7 ASSIGNMENT-PIPELINE AND VECTOR PROCESSING**

1. (a) What is Flynn’s classification? Categorize.

(b) Explain each stream of the Flynn’s classification with an example.

(c) What is parallel processing and explain

2. (a) What is pipelining? Explain. [8]

(b) Explain four segment pipelining. [8]

3. Explain the following in related with Vector Processing

(a) Super Computers

(b) Vector operations

(c) Matrix multiplication

(d) Memory interleaving [4+4+4+4]

4. (a) What is pipeline? Explain space-time diagram for Pipeline.

(b) Explain pipeline for floating point addition and subtraction. [8+8]

5. What is pipelining? Explain pipeline processing with an example. [16]

6 (a) Explain SIMD and MIMD processors in detail.

(b) Explain array processors. [8+8]

7 Explain three segment instruction pipeline and show the timing diagram with data conflict. [16]

8. a) Explain the different types of parallel processors.

b) Explain pipeline for floating point addition and subtraction. [8+8]

9. Explain the following with related to instruction pipeline

(a) Pipeline conflicts (b) delayed branch

(c) Operand forwarding (d) data dependency [16]

10Explain the following with related to the Instruction Pipeline

(a) Pipeline conflicts

(b) Data dependency

(c) Hardware interlocks

(d) Operand forwarding

(e) Delayed load

(f) Pre-fetch target instruction

(g) Branch target bu\_er

(h) Delayed branch [8×2=16]

11(a) What is meant by arithmetic pipeline? Explain. [8]

(b) Explain pipeline for floating point addition and subtraction. [8]

12Write short notes on the following:

(a) Arithmetic pipeline

( b) Four segment instruction pipeline

(c) Timing diagram of instruction pipeline [5+5+6]

13 (a) Explain RISC pipeline in detail.

(b) Explain vector processing [8+8]

14. What are the different hardware techniques to minimize the performance degradation caused by instruction pipeline