RVK/KW/13/3410

Faculty of Engineering & Technology

Eighth Semester B.E. (Information Technology)

Examination

PARALLEL PROCESSING

Elective – II

Sections—A & B

Time—Three Hours]   [Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Answer **THREE** questions from Section A and **THREE** questions from Section B.

(3) Due credit will be given to neatness and adequate dimensions.

(4) Assume suitable data wherever necessary.

(5) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION–A

1. (a) Write a note on Flynn's classification.   8

   (b) Write a note on programming environments.   6

2. (a) Explain the architecture of a vector super computer.   10

   (b) Explain UMA multiprocessor model.   3

3. (a) Give different parallel processing applications.   6

   (b) Explain asynchronous and synchronous model of linear pipeline processor.   7

4. (a) Explain dynamic instruction scheduling using CDC scoreboarding.   5

   (b) Explain S-Access and C/S-Access memory organization.   8

5. Explain different vector instruction types in detail.   13

SECTION–B

6. (a) Explain SIMD Computer Architecture using distributed local memories.   7

   (b) Explain SIMD computer organization using shared memory modules.   7

7. (a) Explain virtual address models for unified and split caches.   6

   (b) Write a note on interleaved memory organization.   7

8. (a) Explain with block schematic the design of a crosspoint switch in a crossbar network.   7

   (b) Explain the cache coherence problem.   6

9. (a) Write a note on store and forward and warmhole routing.   6

   (b) Write a note on network partitioning.   7

10. (a) Draw and explain the data flow graph for computing

$$\cos x \simeq 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!}$$

7

   (b) Write a note on local optimization.   6