Eighth Semester B. E.

(Information Technology) Examination

PARALLEL PROCESSING

Elective – II

Time : Three Hours] [Max. Marks : 80

N. B. : (1) Same answer book must be used for both sections.
(2) All questions carry marks as indicated.
(3) Answer **Three** questions from Section **A** and **Three** questions from Section **B**.
(4) Due credit will be given to neatness and adequate dimensions.
(5) Assume suitable data wherever necessary.
(6) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION A

1. (a) Define parallel processing. How are parallel computer architectures classified ? 7

   (b) Explain instruction level and thread level parallelism. 6

2. (a) Write short notes on hierarchical memory in a parallel processing system. 7

   (b) Explain virtual to real page address translation in paged memory system with neat diagram. 7

3. (a) Explain classification schemes for pipeline processing in detail. 7

(b) Write short note on internal forwarding and register tagging technique. 6

4. (a) Explain the architecture of vector processor with multiple functional pipes. 6

(b) State advantages of vector processing over scalar processing. 3

(c) Explain any two vector optimizing functions. 4

5. (a) Explain multistage dynamic inter connection network used in array processor. 7

(b) What are the network design decisions for inter processing elements communication ? 6

SECTION B

6 (a) Explain algorithm to perform parallel sorting on array processor. 7

(b) Explain the PEPE architecture for associative processor. 6

7. (a) Explain ILLIAC – IV system architecture. 7

(b) Write short note on array processing languages. 7

8. (a) What do you mean by interprocessor communication and synchronization ? Discuss the various issues involved in brief. 7

(b) What are various performance measures for parallel algorithms ? 6

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9. (a) Comment on characteristics of multiprocessor architecture. 7

(b) Write short note on crossbar switch interconnection network. 6

10. (a) Compare control flow and data flow computers. 6

(b) Explain static data flow computer in detail. 7

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