

**2017****M.Sc.****3RD SEMESTER EXAMINATION****COMPUTER SCIENCE****PAPER—COS—302***Full Marks : 50**Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**(Parallel Computing)**

Answer any *two* questions.

2×20

1. (a) What are different paradigms of parallel computing ?
- (b) Explain the Flynn's classification of Computer architectures with block diagram.
- (c) Compare and contrast shared and the distributed memory programming approaches.
- (d) Write the differences between direct network interconnect and indirect network interconnect.

5+5+5+5

*(Turn Over)*

2. (a) Define firstprivate and lastprivate construct in OpenMP.  
(b) How can we use critical section in openMP ?  
(c) Give an example of order construct in openMP.  
(d) Discuss NUMA architecture with appropriate diagram.  
(e) What is Amdahl's Law ? 4+4+4+5+3
3. Write short notes on the following : 5×4
- (i) PRAM model ;
  - (ii) Torus topology ;
  - (iii) Fat tree Network ;
  - (iv) Connection Machine
  - (v) Butterfly interconnect.

**[ Internal Assessment — 10 Marks ]**

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