8th Semester Regular / Back Examination – 2016-17
PARALLEL & DISTRIBUTED SYSTEMS
BRANCH: CSE
Time: 3 Hours
Max marks: 70
Q.CODE: Z222
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1   Answer the following questions: (2 x 10)
- a) Write the scope of Parallel computing.
- b) Write the difference between SIMD and SPMD.
- c) What is true data dependency ? Give an example.
- d) What is vertical and horizontal waste?
- e) What is the difference between prefetching and multithreading?
- f) What is static and dynamic interconnection in network.
- g) What are the subclasses of Parallel random access machine (PRAMs).
- h) Maintaining of coherence memory explain these three states such as shared, invalid and dirty.
- i) What is arc connectivity and bisection width.
- j) What are the parameter require that determine the message passing communication?

Q2 a) What is VLIW? Explain advantages of VLIW.   (5)
     b) Explain different communication model can be adopted for parallel platform.   (5)

Q3 a) Explain multistage network topology in parallel system.   (5)
     b) What do you understand by directory based systems to achieve parallel system?   (5)

Q4 a) Explain different principal parameters that determine the message passing cost in parallel computers.   (5)
     b) Explain cut through routing applied in parallel system and also explain the parallel message cost for communication of messages.   (5)

Q5 a) Define different type of decomposition technique available in parallel system.   (5)
     b) Explain different characteristics of tasks and its inter task interactions.   (5)

Q6 a) Explain master-slave model for load balancing in parallel system.   (5)
     b) Explain different routing mechanisms available for interconnection in   (5)

parallel network.

Q7 a) Explain what is one-to-all broadcast and all-to-one reduction. (5)
   b) Explain the building blocks of send and receive operation for message (5)
      passing communication.

Q8   Write any TWO of the following (5 x 2)
   a) UMA and NUMA.
   b) Scatter and Gather
   c) Cannon's matrix multiplications.
   d) Congestion and Dilation.