Registration No :

Total Number of Pages : 02   **B.Tech.**
                                                                    PECS5411

8th Semester Regular / Back Examination 2017-18
PARALLEL AND DISTRIBUTED SYSTEM
BRANCH : CSE
Time : 3 Hours
Max Marks : 70
Q.CODE : C555
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.
Answer all parts of a question at a place.

Q1   **Answer the following questions :**   **(2 x 10)**
   a) What is a distributed system? Mention few advantages and disadvantages of it?
   b) What is the difference between UMA and NUMA?
   c) Mention the scope of parallel computing?
   d) Define logical clock? Mention the significance of logical clock in distributed system?
   e) What is parallel random access machine? Mention the various subclasses of it?
   f) What is arc connectivity and bisection width?
   g) Describe the working principle of work pool model?
   h) What is the difference between adaptive routing and deterministic routing?
   i) What do you mean by all to all personalized communication?
   j) Define VLIW? What are the disadvantages of it?

Q2 **a)** Define Routing? Describe the routing mechanisms for interconnection network?   **(5)**
       b) What do you mean by parallel platform? Describe the physical organization of parallel platform?   **(5)**

Q3 **a)** Explain one to all broadcast and all to one reduction with example?   **(5)**
       b) Describe the various mapping techniques for load balancing in parallel algorithm design?   **(5)**

Q4 **a)** What do you mean by parallel algorithm models? Why we need these models? Describe the producer consumer model in detail?   **(5)**
       b) What do you mean by circular shift? Explain it with suitable example?   **(5)**

Q5 **a)** What do you mean by performance metrics? Describe the various performance metrics of parallel systems?   **(5)**
       b) Define minimal execution time and minimum cost optimization execution time? Describe how it differs from each other with suitable example?   **(5)**

Q6 **a)** What do you mean by scalability in parallel system? Explain how scalability can be evaluated using analytical tools?   **(5)**
       b) Explain directory based system to achieve parallel system?   **(5)**

Q7 **a)** Describe the desirable features of a good message passing system? **(5)**

   b) Describe send and receive operations in message passing communication with suitable example in parallel system? **(5)**

Q8 **Write short answer on any TWO :** **(5 x 2)**

   a) Matrix vector multiplication

   b) Effect of granularity on performance of parallel system

   c) Scatter and gather

   d) Communication costs in parallel machine