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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