P3311

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T.E. (Computer Engineering) (Semester - II)
PRINCIPLES OF CONCURRENT AND DISTRIBUTED PROGRAMMING
(2012 Pattern)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer Question 1 or 2, 3 or 4,5 or 6, 7or 8, and 9 or 10.*

2) *Neat diagrams must be drawn wherever necessary.*

3) *Figures to the right indicate full marks.*

4) *Assume suitable data if necessary.*

Q1) a) Explain how to count task dependency. **[6]**

b) Write a note on MPI Java. **[4]**

OR

Q2) a) What are features of lisp? List and explain application of LISP. **[6]**

b) Explain the structure of YACC file. **[4]**

Q3) a) Explain following terms related to Concurrency and Synchronization in detail - **[6]**

i) Critical Section

ii) Mutual Exclusion

iii) Dead Lock

b) What is GPU? Explain the GPU architecture in detail. **[4]**

OR

Q4) a) Write a Java program for creating thread by implementing Runnable interface. **[6]**

b) Explain Neural Networks parallel programming architectures. **[4]**

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Q5) a) Explain workstation model and workstation-server model with neat diagram. **[8]**

b) Explain following issues in design of Distributed Operating System - **[8]**

   i) Performance

   ii) Scalability

   iii) Heterogeneity

   iv) Security

OR

Q6) a) Explain various transparencies of a distributed system and how they are different from each other? Explain with example. **[8]**

b) Explain minicomputer and processor-pool model with neat diagram. **[8]**

Q7) a) Explain desktop virtualization and network virtualization. **[8]**

b) Explain requirements for paravirtualized Xen guest domains. **[8]**

OR

Q8) a) Explain the Xen virtual environment and hypervisor. **[8]**

b) Explain server and machine virtualization and storage virtualization. **[8]**

Q9) a) Explain problem decomposition using multi GPU with an example. **[8]**

b) Write and explain a CUDA program for Odd- Even Sort. **[10]**

OR

*Q10)*a) Explain various applications of cloud computing. **[8]**

b) Write and explain a CUDA program for multiplication of two matrices. **[10]**

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