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T.E. (Computer Engineering)
PRINCIPLES OF CONCURRENT AND DISTRIBUTED PROGRAMMING
(2012 Course) (Semester-II) (310249)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) Answer Question 1 or 2, 3 or 4, 5 or 6, 7 or 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) What are the different computational Models? Explain in detail. **[6]**

   b) Write a program in LISP to find factorial of a given number. **[4]**

OR

Q2) a) Explain inter process communication. **[6]**

   b) Explain how to count task dependency. **[4]**

Q3) a) Write a note on Feng's classification. **[6]**

   b) Explain various types of parallelism. **[4]**

OR

Q4) a) Explain: **[6]**

   •   General purpose computer architecture.

   •   Special purpose computer architecture.

   b) Compare GPU and CPU. **[4]**

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Q5) a) What are the major issues of designing a Distributed OS? **[10]**

b) List and explain any two transparencies of a distributed system with a suitable example. **[8]**

OR

Q6) a) What is distributed computing system? Explain tightly and loosely coupled system with neat diagram. **[10]**

b) Explain the processor pool model along with advantages and disadvantages of it? **[8]**

Q7) a) Explain Domain0 and DomainU in Xen? **[8]**

b) What is memory and MMU virtualization? **[4]**

c) What is Hardware virtualization? **[4]**

OR

Q8) a) What is need of Virtualization? Explain types of virtualization. **[8]**

b) What is Kernel-level virtualization? **[4]**

c) What are the advantages of virtualization? Explain. **[4]**

Q9) a) Explain the concept of mobile computing with respect to the following points: **[6]**

i) Mobile computing classification.

ii) Advantages.

iii) Security issues before mobile computing.

b) Write short notes on: **[6]**

• CUDA grids

• CUDA Kernels

c) Write a CUDA program for addition of two matrices. **[4]**

OR

*Q10)*a) Explain threads in CUDA. Also explain problem decomposition. **[6]**

b) Explain multi-GPU model in single-node systems in CUDA. **[6]**

c) Explain CUDA Task Execution Model. **[4]**

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