

Total No. of Questions : 10]

SEAT No. :

**P3534**

**[5560]-186**

[Total No. of Pages : 2

**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]**

**P.T.O.**

- 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]

