P2893

SEAT No. :

[Total No. of Pages :3

[4958]-1086
T.E. (Computer Engg.)
PRINCIPLES OF CONCURRENT & DISTRIBUTED PROGRAMMING
(2012 Course) (Semester - II) (End - Semester)

Time : 2½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.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) Define computation model. Explain specialized computation model in detail. **[5]**

b) Explain the different types of dependency relationships with suitable example. **[5]**

OR

Q2) a) Explain the open CL development framework and architecture with suitable diagram. **[5]**

b) Explain the various parallel programming models. **[5]**

Q3) a) Explain the use of concurrent java for multithreading with suitable example. **[5]**

b) Explain Flynn's architectural classification scheme with diagrams. **[5]**

OR

Q4) Write short note on (any two): **[10]**

a) MPI Java.

b) Shared memory

c) CUDA hardware overview

P.T.O.

Q5) a) Why are distributed operating systems more difficult to design than operating systems for centralized time sharing system? [5]

b) Explain the different aspects of transparency supported by the distributed operating system. [5]

c) Why are distributed computing systems gaining popularity? Which DCS model is popularly used nowadays? Justify your answer. [7]

OR

Q6) a) Enlist the relative advantages and disadvantages of minicomputer and workstation models. [5]

b) Explain processor -Pool model with diagram. Enlist the advantages and disadvantages of it. [5]

c) In what respect are distributed computing systems better than parallel processing system. Explain suitable example of application for which distributed computing systems will be more suitable than parallel processing systems. [7]

Q7) a) Explain Domain 0 and communication with xen with suitable diagram. [5]

b) Explain the various approaches for paravirtualization with suitable diagram. [5]

c) Draw a diagram showing the X86 virtualization architecture & explain the various components of it. [6]

OR

Q8) a) List and explain the advantages of virtualization. [5]

b) Write a short note on hardware support for virtualization. [5]

c) Draw a diagram showing the basic organization of a virtual machine monitor and explain the virtualization basics. [6]

Q9) a) Write a program in CUDA for matrix multiplication. [5]

b) Explain block scheduling with respect to CUDA. [5]

c) Explain the cloud and mobile computing principles. [7]

OR

Q10)a) Explain the structure of CUDA Block, Threads with suitable example. [5]

b) Explain the concept of multi-CPU and multi -GPU with suitable example. [5]

c) Explain memory handling in CUDA with respect to the following: [7]

i) Shared memory

ii) Constant memory

iii) Global memory

EEE