VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING & INFORMATION TECHNOLOGY

SESSION 2014-2015 (EVEN SEMESTER)

6. (*a*) Write A* algorithm for scheduling jobs in a grid environment. What are the limitations of A* algorithm. 5

(*b*) How A* is different from sufferage-based scheduling algorithm ? Illustrate with a diagram. 5

7. (*a*) What do you mean by pervasive, fault tolerant and second accessing of resources in a cloud ? Discuss these three primary services in SaaS, PaaS and IaaS model of cloud. 5

(*b*) Distinguish between trusted and legal user in a cloud. How to compute the trust value and legal standards for cloud-based system ? 5

8. Write short notes on : 4 + 3 + 3

(*i*) Cloud leet and makes span

(*ii*) Green cloud computing

(*iii*) SLA and CSP.

(Set-1)

B.Tech - 8th

High Performance Computing

Full Marks : 70

Time : 3 hours

Answer any six questions including Q. No. 1 which is compulsory

The figures in the right-hand margin indicate marks

1. Answer the following : 2 × 10

(*a*) What is a cluster ? How it is different from traditional super computers ?

(*b*) Give a classification of clusters.

(*c*) Why sequential architectures are not enough ?

(*d*) Differentiate between *monitoring and discovery service* (MDS) and *Metacomputing directory service* in grid.

(e) What do you mean by 'Legion" ?

(f) How "legion" takes the advantage of the grid and P2P technologies ?

(g) What is Nim rod-G ? How it is related to Grid-sim tool kit ?

(h) Define the term GRAM, GASS and IDL in Grid.

(i) What are the different cloud deployment models ?

(j) How to locate a resource in a cloud ?

2. (a) Draw the architecture of a cluster computer. How it's architecture implements a fail-over and fall-back cluster ? 5

(b) Consider the security and flexibility in accessing resources in a high performance computing system. How these two parameters are achieved in both cluster and supercomputer ? 5

3. (a) Discuss the use of "voting" techniques to

achieve fault tolerance and consensus in a grid system. How a computational power grid is different from electrical power grid ? 5

(b) Distinguish between active and passive stand by virtual machines in a cluster. How to achieve availability and reliability using stand by systems ? 5

4. (a) How the jobs are classified in a grid ? How job management system is different from resource management system in a computational grid ? 5

(b) What are various resource utilisation policies ? What do you mean by high through-put computing ? 5

5. (a) Explain the need and its function for a grid middleware. Explain with an example middleware. 5

(b) Distinguish between computational and data grids. What are the drawbacks of TCP/IP for its use in grid ? 5