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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

INFORMATION TECHNOLOGY

Sixth Semester

IT9354-GRID COMPUTING

(Regulation 2008)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Differentiate Cluster and Grid computing.
2. List the document types related to standards and defined by GGF.
3. Write down the components present in Grid monitoring architecture with their functionalities.
4. How is data request and presentation handled in RGMA?
5. Hosts A and Host B in a Grid environment wants to communicate messages between them confidentially. Which secret sharing mechanism can be used to achieve confidentiality?
6. Which daemon in Condor is responsible for job flocking?
7. List the four forms of ancillary data and give example for each.
8. Write down the elements present in a portlet window.
9. List down the names of any four Grid middleware.
10. What are the functionalities of Information services in GLite?

Part – B (5 x 16 = 80 marks)

11. (i) Discuss on the Grid protocol architecture that defines common mechanisms, interfaces, schemas and protocols at each layer by which users can negotiate, establish and manage resources.(8)
(ii) Compare and contrast OGSA and WSRF standards.(8)

12. a) (i) Discuss on the steps executed by an user who would like to avail the Grid services.(8)
(ii) Discuss about the monitoring and managing service developed by NASA.(8)

OR

b) (i) Discuss on the review criteria that are used to categorize and classify the Grid monitoring systems.(8)
(ii) Discuss on the monitoring system whose components are represented as Grid services.(8)

13. a) (i) How will you design your Grid service to prevent communication to or from forbidden users?(8)
(ii) Select the best resource from the resource information matrix given below:

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Resource	CPU speed	CPU load	RAM size	RAM usage
A	2.6	30	512	50
B	1.2	50	256	40
C	1.8	40	512	30
D	1.2	50	256	60

The CPU speed is given in GHZ and Ram size in MB and load and usage is in %. Assume total weight as 10, CPU weight as 5 and Ram weight as 5. The minimum CPU speed is 1 GHZ and minimum RAM size is 256 MB.(8)

OR

b) (i) How is the user proxy credential created? Explain.(8)
(ii) Compare and contrast the various scheduling paradigms used in Grid.(8)

14. a) (i) What is the need for second generation Grid portals? Explain.(8)
(ii) Discuss on the data oriented services provided by Grid middleware.(8)

OR

b) (i) How are storage replicas efficiently handled by Grid? Explain.(8)
(ii) Explain the method of accessing grid services in a grid portal via portlets.(8)

15. a) Explain in detail the Globus toolkit structure with the functionality of each component present in the structure.(16)

OR

b) Explain in detail the architecture, components and features of GLite grid middleware.(16)