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1

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

GRID & CLUSTER COMPUTING

(Computer Science & Systems Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Describe different forms of computing.
(b) Give a brief note on remote procedure call.

2 (a) What is parallel computing? Why should we use parallel computing?
(b) Describe various parallel programming models.

3 (a) Describe cluster components in detail.
(b) Mention the applications of clusters.

4 (a) What is grid computing? Describe the need for grid technology.
(b) Discuss how grid architecture maps to internet protocol architecture.

5 What are the service message description mechanisms available? Explain.

6 (a) Describe the architecture of OGSA.
(b) Explain briefly about commercial data center.

7 (a) Explain briefly about service programming model.
(b) With a neat diagram explain the architecture of globus GT3.

8 Discuss in detail OGSI.NET middleware solutions.

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2

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

GRID & CLUSTER COMPUTING

(Computer Science & Systems Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Why distributed computing? What are the reasons for the popularity of distributed computing?

(b) Explain peer-to-peer distributed computing paradigm.

2 (a) Give the Flynn's classification of multi processors and explain.

(b) Discuss the following parallelization paradigms:

(i) Single-program multiple-data (SPMD)

(ii) Divide and conquer

3 (a) What is a cluster? Mention some typical clusters. What is so different about clusters?

(b) Discuss some applications of clusters.

4 (a) How do you map Grid architecture to IP architecture?

(b) Discuss any two commercial applications of grids.

5 Explain web service architecture in detail.

6 (a) Define grid service instance and grid services reference.

(b) Describe in detail about service data concepts.

7 (a) Describe the service programming model in GT3.

(b) Write notes on grid service life cycle model.

8 Write about the following services supported by GT3:

(i) Data management

(ii) Information services

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3

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

GRID & CLUSTER COMPUTING

(Computer Science & Systems Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Differentiate between centralized and distributed computing.
(b) Give the classification of the paradigms for distributed applications and explain.

2 (a) Describe the paradigms popularly used in parallel programming.
(b) List the advantages of parallel computing.

3 (a) Give the typical cluster computer architecture and explain.
(b) Describe few applications of clusters.

4 (a) Write about the scope of grid computing in business areas.
(b) Discuss the architecture of grid computing systems.

5 Write in detail about WSDL and SOAP.

6 (a) Describe in detail about the inheritance interface diagram.
(b) What are the OGSA platform components? Write notes on each of them.

7 (a) Describe about the programming models available in GT3.
(b) Mention some of the expression evaluators supported by GT3.

8 Describe the following services offered by GT3:
(i) Data management
(ii) Resource information provides service

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4

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

GRID & CLUSTER COMPUTING

(Computer Science & Systems Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) List the advantages and disadvantages of distributed computing.
(b) Give a note on distributed objects paradigms.

2 (a) List the user's expectations from parallel programming environments.
(b) Discuss the following parallel programming models:
(i) Message passing model
(ii) Object and service oriented models

3 (a) Give the cluster architecture and describe the components of cluster.
(b) List the grand challenging applications of clusters.

4 (a) What is a Grid? Discuss an example grid.
(b) Describe the grid relationships with other technologies.

5 Discuss in detail about web service and grid service.

6 (a) What are the OGSA basic services? Explain each of them with necessary diagrams.
(b) Mention the layers in the OGSA architectural organization.

7 (a) Explain the architecture of globus GT3 toolkit with a neat diagram.
(b) "The GT3 software is providing OGSI functionalities based on web service and the java programming model." Explain.

8 Describe the following services offered by GT3:
(i) Resource allocation
(ii) Index services

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