

**B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2014**

(Regulation 2009)

Sixth Semester

**INFORMATION TECHNOLOGY**

CSE131: Grid Computing

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Which layer of grid computing model includes protocols and interfaces that provide access to the resources that are being shared?  
a) Connectivity layer                      b) Fabric layer  
c) Resource layer                          d) Application layer
2. Identify the grid resource allocation management protocol.  
a) GSS    b) RPC  
c) GRIS                                        d) GRAM
3. Which of the following is a object-based metaseystems software for grid applications?  
a) ARPA                                        b) Nimrod  
c) Condor                                      d) Legion
4. UNICORE stands for \_\_\_\_\_.  
a) UNiform Interface to COmputer REsource                      b) UNicode Interface to COmputing REsource  
c) UNicode Interface to COmputer REsource                      d) UNiform Interface to COmputing REsource
5. Which of the following are the two kinds of message encoding ?  
a) Literal encoding and SOAP encoding                      b) NRZ-I encoding and SOAP encoding  
c) NRZ encoding and SOAP encoding                          d) Literal encoding and NRZ encoding
6. Which of the following is used to describe Grid service?  
a) WSDL                                        b) GWSDL  
c) WGSDL                                      d) GSDL
7. What are the services provided by GT3?  
a) Transient services , Web services                      b) Transient services , Persistent services  
c) Transient services , Data services                          d) Transparent services , Persistent services
8. Which of the following is not a handler for secured messaged exchange in GT3?  
a) WSSecurity Handler                      b) GSS Handler  
c) Integrity Handler                          d) Authorization Handler

9. What is of the following is not a major type of cloud computing usage?  
a) Software as a Service                      b) Hardware as a Service  
c) Platform as a Service                      d) Infrastructure as a Service
10. Which of the following is not relevant to Cloud Computing?  
a) Skytap                                        b) StrikeIron  
c) Nimrod                                        d) Nirvanix

**PART B (10 x 2 = 20 Marks)**

11. List the features of computational grid.
12. How is grid computing different from P2P and cluster computing?
13. Suppose we have a grid-enabled application for which a typical work unit executes in 15 minutes on a hypothetical "average" grid client, consumes 2 MB of input data, and produces 0.4 MB of output data. Calculate the Compute Intensity.
14. Enumerate the capabilities of a Grid Portal.
15. What are the core requirements for describing web services based on OGSI?
16. What are the main purposes of use cases defined by the OGSA group?
17. List any four grid computing toolkits.
18. What is the significance of message handlers in GT3?
19. Is HaaS (Hardware as a Service) is possible in cloud? Justify your answer.
20. What are the services provided by 3tera.com for on-demand computing?

**PART C (5 x 14 = 70 Marks)**

21. a) (i) Design virtual organization for drug analysis. Explain each component involved in it. q (8)  
(ii) Briefly explain about Grid Security Infrastructure. (6)  
**(OR)**  
b) (i) Compare and contrast computational grid and data grids. (6)  
(ii) Sketch the layered grid architecture model and explain the functionality of each layer. (8)
22. a) (i) Differentiate between Condor and Condor-G. (4)  
(ii) Discuss briefly about organization building and using grid based solution to solve their computing data and network requirements. . (10)  
**(OR)**  
b) (i) Discuss about the basic classification of grid computing organizations. (6)

- (ii) Consider two jobs –Job1 and Job2.Job1 requires a resource to be atleast 80% effective and Job2 require a resource to be atleast 50% effective. Consider three resources R1, R2and R3 whose resource information matrix details is provided in the table given below. Let weightage for CPU is 6 and RAM . (8)

	CPU speed (GHz)	CPU load(%)	RANM Size(MB)	RAM usage(%)
R1	1.8	50	256	50
R2	2.6	70	512	60
R3	1.2	40	512	30

Identify the resource best suited for Job1 and Job2.

23. a) What is the objective of OGSA basic services? Explain each of the services with necessary diagrams. (8)
- (OR)**
- b) (i) List the major goals of OGSA.Summarize the relationship between SOAP and XML. (6)
- (ii) Describe in detail the architecture of GT3.Write the core services supported by the same. (8)
24. a) Summarize the functionalities of OGSI.NET architecture components with a neat sketch. (8)
- (OR)**
- b) (i) What is load balancing? Explain the load balancing feature of GT3. (6)
- (ii) Analyze the various challenges faced in providing high level services by GT3 (8)
25. a) (i) Discuss the advantages and disadvantages of Cloud computing environment. (6)
- (ii) Explain how cloud computing facilitates for the sports community. (8)
- (OR)**
- b) Discuss the basic services provided by Cloud with related examples.

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