SKR/KW/24/2073

Faculty of Science & Technology

Seventh Semester B.E. (Information Technology) (C.B.S.) Examination

CLUSTER & GRID COMPUTING

Elective—II

Time : Three Hours] [Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.
(2) Solve Question No. 1 **OR** Question No. 2.
(3) Solve Question No. 3 **OR** Question No. 4.
(4) Solve Question No. 5 **OR** Question No. 6.
(5) Solve Question No. 7 **OR** Question No. 8.
(6) Solve Question No. 9 **OR** Question No. 10.
(7) Solve Question No. 11 **OR** Question No. 12.
(8) Assume suitable data whenever necessary.
(9) Illustrate your answers whenever necessary with the help of neat sketches.

1. (a) Define grid. What are the key distinctions between cluster and grid computing ? 7
(b) Discuss about cluster middle ware. 6

OR

2. (a) Explain cluster architecture. 7
(b) Explain networking protocols for clusters. 6
3. (a) Describe about PARAM cluster system. 7
(b) Write down difference between load sharing and load balancing. 6

OR

4. (a) Discuss about Compas system. 7
(b) Explain in brief performance models and simulation. 6
5. (a) What is grid computing ? Discuss about different topologies components of grid. 7
(b) Draw the grid architecture and describe the functioning of each part. 7

OR

Model Questions

6.	(a)	List out the characterization of grid & elaborate it in detail.	7
	(b)	Briefly describe how the grid related standard bodies work on grid computing.	7
7.	(a)	Write notes on :	
		(i) OGSA	
		(ii) WSRF.	7
	(b)	Explain briefly about Globus GT4 toolkit.	6
		OR	
8.	(a)	Explain the web services architecture with neat diagram.	7
	(b)	Describe about the concept of distributed computing with diagram	6
9.	(a)	Explain metadata in semantic web.	7
	(b)	Describe semantic web services.	6
		OR	
10.	(a)	What is Autonom computing ?	7
	(b)	Write short note on summarization of ontology languages.	6
11.	(a)	Discuss about grid security infrastructure.	7
	(b)	What are the possible Vulnerabilities ?	7
		OR	
12.	(a)	Explain Grid Monitoring architecture in brief.	7
	(b)	What are the scheduling paradigms in Grid Computing ?	7

PRS/KS/24/2400

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INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve Question No. **1 OR** Question No. **2**.

(3) Solve Question No. **3 OR** Question No. **4**.

(4) Solve Question No. **5 OR** Question No. **6**.

(5) Solve Question No. **7 OR** Question No. **8**.

(6) Solve Question No. **9 OR** Question No. **10**.

(7) Solve Question No. **11 OR** Question No. **12**.

(8) Due credit will be given to neatness and adequate dimesions.

(9) Assume suitable data wherever necessary.

(10) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Differentiate between Grid computing and cluster computing. 6

(b) What are the broad approaches for migration into cloud ? Discuss the challenges and risks involved in this process. 8

OR

2. (a) Discuss about cluster middle ware. 7

(b) Describe the working of high throughput computing. 7

3. (a) Write down difference between Load sharing and Load balancing. 6

(b) Describe Compass system. 7

OR

4. (a) Elaborate PARAM case study of cluster system. 6

(b) State & illustrate the performance models and simulation techniques used in cluster technology. 7

Model Questions

5.	(a)	What is grid computing ? Discuss about different topologies.	6
	(b)	Draw the grid architecture & describe the functioning of each part.	7
		OR	
6.	(a)	Explain the working of Global Grid Forum ? Explain four document types produced by GGF.	7
	(b)	Briefly describe how the grid related standard bodies work on grid computing.	6
7.	(a)	What is Distributed Computing ? Spell out the traditional paradigms for distributed computing.	7
	(b)	Explain the web services architecture with neat explanation.	6
		OR	
8.	(a)	Explain briefly about Globus GT4 Toolkit.	7
	(b)	Elaborate WSRF architecture.	6
9.		Write short note on :-	14
	(i)	Metadata	
	(ii)	Ontology	
	(iii)	Semantic web services.	
		OR	
10.	(a)	Describe the layered structure of semantic grid.	7
	(b)	What is Autonomic Computing ?	7
11.	(a)	What is Grid Scheduling ? Explain.	6
	(b)	Describe working principles of scheduling system.	7
		OR	
12.	(a)	Describe grid security infrastructure in detail.	6
	(b)	Explain GMA in detail.	7