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G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.



UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2025.

(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., INFORMATION TECHNOLOGY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
V	PART - III	CORE ELECTIVE - 2	U23IT5E2A	GRID COMPUTING

Date & Session: 08.11.2025/FN

Time : 3 hours

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	Grid applications are primarily used for _____. a) Small-scale local processing b) Interactive entertainment c) Large-scale computations involving distributed resources d) Mobile game development
CO1	K2	2.	What was the primary goal of early grid computing initiatives? a) To develop gaming application b) To connect isolated supercomputers for resource sharing c) To create local area networks d) To develop database management systems
CO2	K1	3.	The Global Grid Forum (GGF) was established to _____. a) Promote open source social media platforms b) Develop grid standards and coordinate global grid efforts c) Create private cloud tools for corporations d) Replace internet protocols
CO2	K2	4.	Which organization is known for using grid computing in particle physics research? a) Google b) CERN c) IBM d) NASA
CO3	K1	5.	The Grid Problem focuses mainly on _____. a) Website design b) Network security c) Seamless resource access, allocation, and management in heterogeneous environments d) Software installation
CO3	K2	6.	The architecture of a grid system typically consists of how many layers? a) 2 b) 3 c) 4 d) 5
CO4	K1	7.	"Business on Demand" refers to. a) Outsourcing of core IT infrastructure b) Delivering business services dynamically as needed c) Buying software online d) Manual business process execution

CO4	K2	8.	What is the purpose of a Semantic Grid? a) To enable video streaming over a Grid b) To connect only government-based Grids c) To enhance resource discovery and interoperability using metadata and ontologies d) To provide real-time gaming on Grid platforms
CO5	K1	9.	In Web Services Architecture, which protocol is commonly used for message exchange? a) FTP b) SOAP c) SMTP d) HTTP only without any format
CO5	K2	10.	Which of the following is a key difference between Web Services and Grid Services? a) Web Services are designed for large-scale distributed computing b) Grid Services support stateful interactions, unlike traditional Web Services c) Grid Services only work with REST APIs d) Web Services are slower than Grid Services
Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	Explain the concept of early grid computing. What were the main objectives and characteristics of initial grid systems? (OR)
CO1	K3	11b.	Differentiate between early grid computing and modern grid computing. Explain how current advancements address earlier limitations
CO2	K3	12a.	Explain the role of Global Grid Forum (GGF) in the development of grid computing standards and best practices. How do these standards support interoperability in grid environments? (OR)
CO2	K3	12b.	Discuss the contribution of organizations like CERN, Globus Project, and commercial companies in building and using grid-based solutions. Support your answer with examples.
CO3	K4	13a.	Analyze the relationship between Grid Architecture and other distributed technologies such as Cluster Computing and Cloud Computing. (OR)
CO3	K4	13b.	Examine the key components of Grid Architecture. How do these components interact to support large-scale distributed computing?
CO4	K4	14a.	Evaluate the role of Service-Oriented Architecture and Semantic Grids in enhancing Grid computing environments. (OR)
CO4	K4	14b.	Discuss how the integration of Service-Oriented Architecture (SOA) and Semantic Grid technologies improves resource discovery and service interoperability in Grid environments.
CO5	K5	15a.	Evaluate how XML-based messaging and WSDL contribute to the interoperability of Web Services across heterogeneous platforms. Support your answer with examples (OR)

CO5	K5	15b.	Assess the relationship between Web Services and Grid Services. In what ways do Grid Services extend traditional Web Service models to support distributed resource sharing?
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Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	16a.	Discuss how modern grid infrastructure supports the deployment of large-scale applications.
CO1	K3	16b.	(OR) Analyze the evolution of grid computing from early initiatives to present-day infrastructures
CO2	K4	17a.	Explain the structure, objectives, and key contributions of the Global Grid Forum (GGF) in promoting grid computing.
CO2	K4	17b.	(OR) Discuss how research organizations and universities are leveraging grid-based solutions to solve large-scale scientific problems
CO3	K4	18a.	Explain the significance of resource sharing and coordination in the context of Virtual Organizations.
CO3	K4	18b.	(OR) How does the concept of Virtual Organizations support resource sharing in a Grid environment? Illustrate your answer with examples.
CO4	K5	19a.	Critically evaluate how the convergence of autonomic computing, virtualization, and service-oriented architecture enables dynamic, self-managing Grid environments
CO4	K5	19b.	(OR) Assess the challenges and advantages of implementing Semantic Grid technologies in large-scale distributed systems.
CO5	K5	20a.	Critically evaluate how Service-Oriented Architecture (SOA) and Web Service standards (XML, SOAP, WSDL) contribute to platform-independent communication in distributed systems
CO5	K5	20b.	(OR) Analyze the architectural and functional differences between traditional Web Services and Grid Services