

Part - A

1. Define – OSGI.

Open Grid Services Architecture (OGSA) is a set of standards defining the way in which information is shared among diverse components of large, heterogeneous grid systems. In this context, a grid system is a scalable wide area network (WAN) that supports resource sharing and distribution. OGSA is a trademark of the Open Grid Forum.

2. Define – OSGA.

The **Open Grid Services Infrastructure** (OGSI) was published by the Global Grid Forum (GGF) as a proposed recommendation in June 2003.^[1] It was intended to provide an infrastructure layer for the Open Grid Services Architecture (OGSA). OGSI takes the statelessness issues (along with others) into account by essentially extending Web services to accommodate grid computing resources that are both transient and stateful.

3. Define – Peer to Peer Computing.

Peer to Peer computing is a relatively new computing discipline in the realm of distributed computing. P2P system defines collaboration among a larger number of individuals and/or organizations, with a limited set of security requirements and a less complex resource-sharing topology.

4. What is Dynamic Accounting System?

DAS provides the following enhanced categories of accounting functionality to the IPG community:

- Allows a grid user to request access to a local resource via the presentation of grid credentials
- Determines and grants the appropriate authorizations for a user to access a local resource without requiring a preexisting account on the resource to govern local authorizations.

5. Define – SOA.

A service-oriented architecture is intended to define loosely coupled and interoperable services/applications, and to define a process for integrating these interoperable components.

6. What are the major goals of OSGA?

- Identify the use cases that can drive the OGSA platform components.
- Identify and define the core OGSA platform components.
- Define hosting and platform specific bindings.
- Define resource models and resource profiles with interoperable solutions.

7. What are the layers available in OGSA architectural organizations?

- Native platform services and transport mechanisms.
- OGSA hosting environment.
- OGSA transport and security.
- OGSA infrastructure (OGSI).
- OGSA basic services (meta-OS and domain services)

8. What is meant by grid infrastructure?

Grid infrastructure is a complex combination of a number of capabilities and resources identified for the specific problem and environment being addressed. It forms the core foundations for successful grid applications.

9. List some grid computing toolkits and frameworks?

- Globus Toolkit
- Globus Resource Allocation Manager (GRAM)
- Grid Security Infrastructure (GSI)
- Information Services
- Legion
- Condor and Condor-G
- NIMROD
- UNICORE
- NMI

10. Define - GRAM.

GRAM provides resource allocation, process creation, monitoring, and management services. The most common use of GRAM is the remote job submission and control facility. GRAM simplifies the use of remote systems.

11. What is the role of the grid computing organization?

- Organizations developing grid standards and best practices guidelines.
- Organizations developing grid computing toolkits, frameworks and middleware solutions.
- Organizations building and using grid - based solutions to solve their computing, data, and network requirements.
- Organizations working to adopt grid concepts into commercial products, via utility computing and business on demand computing.

12. What are the different layers of grid architecture?

- Fabric Layer: Interface to local resources
- Connectivity Layer: Manages Communications
- Collective Layer: Coordinating Multiple Resources
- Application Layer: User Defined Application.

13. What are the fundamental components of SOAP specification?

- An envelope that defines a framework for describing message structure.
- A set of encoding rules for expressing instances of application defined data types
- A convention for representing remote procedure (RPC) and responses.
- A set of rules for using SOAP with HTTP.
- Message exchange patterns (MEP) such as request-response, one-way and peer-to-peer conversations.

14. Define - SOAP.

SOAP is a simple and lightweight XML-based mechanism for creating structured data packages that can be exchanged between network applications. SOAP provides a simple enveloping mechanism and is proven in being able to work with existing networking services technologies such as HTTP. SOAP is also flexible and extensible. SOAP is based on the fact that it builds upon the XML info set.

15. Define WSDL.

WSDL is an XML Info set based document, which provides a model and XML format for describe web services. This enables services to be described and enables the client to consume these services in a standard way without knowing much on the lower level protocol exchange binding including SOAP and HTTP. This high level abstraction on the service limits human interaction and enables the automatic generation of proxies for web services, and these proxies can be static or dynamic. It allows both document and RPC - oriented messages.

PART – B

- 1) Write short notes on Open Grid Service Architecture. (16)
- 2) Explain in detail, the functional requirements of OGSA. (16)
- 3) Explain Practical & Detailed view of OGSA/OGSI. (16)
- 4) Explain in detail, OGSA services.(16)
- 5) Describe about the relation of grid architecture with other distributed technologies.(16)
- 6) What are the third generation initiatives of grid computing?
- 7) Discuss briefly about organization building and using grid based solution to solve their computing data and network requirements.