General questions:

Q 1) Explain Web Services?

Ans: A Web Service can be defined as an application component for communication or say exchanging information between two applications over the network. Web services basically work on client server model where web services are easily accessible to client applications over the network.

To enable communication between various applications, web services take the help of open standards like XML (for data tagging), SOAP (for message transferring) and WSDL (to denote service availability).

Q 2) What are the components of web service?

Ans: The different components of web services are

SOAP- Simple Object Access Protocol

UDDI- Universal Description, Discovery, and Integration

WSDL- Web Service Description language

RDF- Resource Description Framework

XML- Extensible Markup Language

Q 3) Explain the term Interoperability with respect of Web services?

Ans: The term ‘Interoperability’ is widely used in product marketing description which defines the ability of different products or systems working together without any special effort from the customer part.

This is applicable in the same way when we talk about ‘Interoperability’ in terms of web services. Here it determines the communication between various applications, sharing of data as well as services among themselves. There is no restriction on the type of application to be in communication. If any code is written, it will be treated as generic code that will be understood by all application. Thus, the cost of writing specific codes for each application is reduced.

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Q 4) Define web service protocol stack and its layers?

Ans: Web service protocol stack consists of 4 layers. This can be described as follows

1) Service transport: This is the first layer which helps in transporting XML messages between various client applications. This layer commonly uses the below-mentioned protocols:

HTTP(Hypertext Transport Protocol)

SMTP(Simple Mail Transport Protocol)

FTP(File Transfer Protocol)

BEEP(Block Extensible Exchange Protocol)

2) XML messaging: This layer is based on the XML model where messages are encoded in common XML format which is easily understood by others. This layer includes

XML-RPC

SOAP(Simple Object Access Protocol)

3) Service description: This layer contains description like location, available functions, and data types for XML messaging which describes the public interface to a specific web service. This layer includes:

WSDL(Web Service Description Language)

4) Service discovery: This layer is responsible for providing a way to publish and find web services over the web. This layer includes:

UDDI(Universal Description, Discovery, and Integration)

Q 5) Explain web service architecture?

Ans: Web service framework consists of an architecture which consists of three different layers. The roles of these layers are defined as below

Service Provider: As the name denotes, service provider role is to create the web service and makes it accessible to the client applications over the internet for their usage.

Service Requestor: Service requestor is basically any consumer of web service like any client application. Client applications are written in any language contact web service for any type of functionality by sending XML request over the available network connection.

Service Registry: Service registry is the centralized directory which helps locate web services for client applications. Here we can find the existing web services, as well as developers, can also create the new one.

The Service Provider uses the 'Publish' interface of Service Registry to make the existing web services available to client applications. With all the information provided by the service registry, service requestor is able to bind or invoke services.

Q 6) What do you understand by XML-RPC?

Ans: RPC is Remote Procedure Call and as the name suggests, it is the method of calling a procedure or function available on any remote computer.

XML stands for Extensible Markup Language. Thus XML-RPC represents a simple protocol that performs RPCs by using XML messaging. This has been considered as an excellent tool for connecting different environments and also establishing connections between wide varieties of computers.

Q 7) Explain features of XML-RPC?

Ans: The major features of XML-RPC are enlisted below

RPCs are performed using simple XML language.

XML encoded Requests are sent via HTTP POST.

XML Response is embedded in HTTP response.

It is considered as platform-independent.

It allows communication between diverse applications.

It uses HTTP protocol for passing information between client and server computers.

It has small XML vocabulary for describing request and response's nature.

Q 8) Enlist few advantages of web services?

Ans: We have already discussed web services, its architecture, components. Now, let us see some its advantages

Every application is now on the internet and it the web service which provides some sort of required functionality to the client applications.

Web services help in exposing the existing functionalities over the network to help other applications to use in their programs.

It has features like 'Interoperability' which determines the communication between various applications, sharing of data as well as services among themselves.

Web services use the standardized web service protocol stack for communication which consists of 4 layers namely, Service Transport, XML messaging, Service description and Service discovery.

It has the feature of the low cost of communication because of the usage of SOAP (Simple Object Access Protocol) over HTTP protocol.

Easy to deploy, integrate and is reusable.

Allows simple integration between different feature as a part of loose coupling feature

Q 9) Explain the term UDDI with its features?

Ans: UDDI is an XML-based standard in the service discovery layer of web service protocol stack. It is used for publishing and finding web services over the web as it acts like a directory. Some of the features of UDDI are explained below

It is an open framework and is platform independent.

SOAP, COBRA, and Java RMI protocols are used for communication.

It helps businesses to discover each other and enable interaction between them over the

internet.

It acts as a database containing all WSDL files.

Q 10) Which language is used by UDDI?

Ans: UDDI uses the language known as WSDL (Web Service Description Language)

Q 11) Explain BEEP?

Ans: BEEP stands for Blocks Extensible Exchange Protocol. BEEP is determined as building new protocols for the variety of applications such as instant messaging, network management, file transfer etc. It is termed as new Internet Engineering Task Force (IETF) which is layered directly over TCP. It has some built-in features like

Authentication

Security

Error handling

Handshake Protocol

Q 12) Enlist few tools used to test web services?

Ans: To test Web services, below-mentioned tools are used

SoapUI

REST client

JMeter

Q 13) Do we require any special application to access web service?

Ans: The only requirement for accessing web services from any application is that it must support XML-based request and response. There is no need or say the requirement of installing any application for accessing web services.