**Viva Questions and Answers for Cloud Computing Aims**

**Aim 1: Multiplication using Simple SOAP Service**

1. **What is a SOAP web service?**
   * A SOAP web service is a protocol used for exchanging structured information in the implementation of web services.
2. **Which protocol is commonly used with SOAP?**
   * HTTP is commonly used with SOAP.
3. **What are the components of a SOAP message?**
   * Envelope, Header, Body, and Fault.
4. **Why is WSDL important in SOAP?**
   * WSDL (Web Services Description Language) defines the methods and parameters exposed by the SOAP service.
5. **How is the multiplication operation implemented in SOAP?**
   * By defining a method in the web service that accepts two numbers, multiplies them, and returns the result.

**Aim 2: Fahrenheit to Celsius Conversion using SOAP**

1. **What is the formula to convert Fahrenheit to Celsius?**
   * C = (F - 32) × 5/9
2. **Which data type is suitable for temperature conversion?**
   * float or double for precision.
3. **What is the purpose of a web service interface in this application?**
   * It allows users to input Fahrenheit and receive the Celsius conversion via SOAP calls.
4. **Can SOAP services return multiple values?**
   * Yes, but it’s more common to return a single structured response.
5. **What language was used to implement this service?**
   * Typically Java or .NET for SOAP-based web services.

**Aim 3: Virtual Machine using KVM**

1. **What is KVM?**
   * Kernel-based Virtual Machine, a virtualization module in the Linux kernel.
2. **How do you check if KVM is supported?**
   * Use kvm-ok or check for virtualization support in /proc/cpuinfo.
3. **What is a network bridge in virtualization?**
   * It allows VMs to access external networks like the host.
4. **What command is used to create a virtual machine in KVM?**
   * virt-install or using virt-manager GUI.
5. **What are the advantages of KVM over other hypervisors?**
   * Integrated into Linux, better performance, open-source.

**Aim 4: Largest of Two Numbers using SOAP**

1. **How is comparison done in a SOAP service?**
   * Using conditional logic like if-else inside the service method.
2. **What is WSDL used for in this application?**
   * It describes the available operation for finding the largest number.
3. **What is the datatype used for comparison?**
   * int or float depending on input.
4. **Can SOAP support operations with multiple arguments?**
   * Yes, SOAP can handle multiple input parameters.
5. **Is SOAP platform-independent?**
   * Yes, SOAP can be consumed by any platform supporting XML.

**Aim 5: Cube of a Number using SOAP**

1. **How is a cube of a number calculated?**
   * By multiplying the number three times: n \* n \* n.
2. **What data types are used for cube calculation?**
   * Usually int or double.
3. **How is the cube operation exposed in WSDL?**
   * As a method with input and output parameters.
4. **What is SOAPEnvelope used for?**
   * It wraps the entire SOAP request and response.
5. **Is the response from SOAP XML or JSON?**
   * SOAP uses XML for its messaging.

**Aim 6: Addition of Three Numbers using SOAP**

1. **How many parameters are passed in this service?**
   * Three numerical parameters.
2. **What method is defined in the SOAP service?**
   * A method like addThreeNumbers(int a, int b, int c).
3. **What are the common ports used in SOAP?**
   * Usually port 8080 or 80.
4. **What is the return type of this method?**
   * Usually int or float depending on implementation.
5. **What tool is used to test SOAP services?**
   * SOAP UI or client Java/.NET programs.

Here are the **important viva questions and answers** for **Aim 7: CRUD operations with "Player" database using REST service**:

**Aim 7: Simple REST Service with “Player” Database**

1. **What is a RESTful web service?**
   * REST (Representational State Transfer) is an architectural style that uses standard HTTP methods (GET, POST, PUT, DELETE) for communication between client and server.
2. **What does CRUD stand for in the context of REST APIs?**
   * CRUD stands for Create, Read, Update, and Delete – the four basic operations you can perform on data.
3. **Which HTTP methods are used for CRUD operations?**
   * **POST** → Create
   * **GET** → Read
   * **PUT** → Update
   * **DELETE** → Delete
4. **What fields are included in the Player database?**
   * Player\_Name, Age, Country, Runs.
5. **What data format is used to send/receive data in REST?**
   * JSON (JavaScript Object Notation) is the most commonly used format.
6. **How do you test a REST API?**
   * Using tools like **Postman**, **cURL**, or browser-based REST clients.
7. **What is the purpose of a REST endpoint?**
   * It is a specific URL path that maps to a particular function (like creating or reading a player).
8. **How do you handle errors in RESTful services?**
   * By returning appropriate HTTP status codes (e.g., 404 for Not Found, 400 for Bad Request, 200 for Success).
9. **How is the data stored in the backend?**
   * Typically in a relational database like MySQL or NoSQL databases like MongoDB.
10. **What is the significance of status codes like 200, 201, 404, and 500 in REST?**

* **200 OK** – Request successful
* **201 Created** – Resource successfully created
* **404 Not Found** – Resource not found
* **500 Internal Server Error** – Server-side error

1. **How is a REST API deployed?**

* REST APIs are deployed on a server using platforms like **Apache Tomcat**, **Node.js**, **Spring Boot**, or **Flask** in Python.

1. **Can REST APIs be secured? If yes, how?**

* Yes, by using authentication methods such as **JWT (JSON Web Tokens)**, **OAuth**, or **API keys**.

1. **What framework did you use to implement this service?**

* Example: **Spring Boot (Java)**, **Flask (Python)**, **Express (Node.js)**.

1. **What is the role of the controller in a REST API?**

* The controller handles incoming HTTP requests and returns responses by interacting with the service and database layers.

1. **Why is REST preferred over SOAP in modern applications?**

* REST is lightweight, easier to integrate, uses JSON, and supports multiple formats and platforms.