10. **Cloud Computing**

10.1. **Cloud Computing Foundations**

   a) Name the essential characteristics of Cloud Computing.
   b) Compare the approaches of grid and cloud computing in terms of goals, business model, quality-of-service support, administration, resource provision and consumption, and security requirements.

10.2. **Cloud Service and Deployment Models**

   a) Explain briefly the different cloud service models and give an example for each model.
   b) What is the main difference between Public and Private Cloud services?

10.3. **Virtualization**

   a) Explain the difference between Virtualization and Abstraction.
   b) What is the difference between a Virtual Machine and a Container?

10.4. **Load Distribution**

   a) Explain the concepts of Scale Up and Scale Out.
   b) What is the difference between packet-based and flow-based load balancing? In what cases is stickiness required?
   c) How is DNS-based Load Balancing working? What are disadvantages of this approach?
   d) Discuss metrics that could be used to configure a load balancer or an autoscaling policy.
   e) Explain the principle of HTTP(S) load balancing to distribute the load across regions.