1. What is Azure App Service and when to opt for Azure App Service?
   Azure App service is a managed service of Azure that enables us to create web, mobile, logic, API easily in Azure. These apps are managed by Azure App service and run in managed Virtual Machines. Also, auto-scaling feature supported with in Azure App service which automatically increase or decrease no of virtual machines based on consumption of resources. Besides also enables companies to create enterprise -ready mobile or web apps for any platform or devices and deploy on scalable and reliable cloud infrastructure.

   Some of the key benefits of App Service
   High level of security
   Collaborate and develop applications
   Multi format /multilingual support
   When to use Azure App service
   When organization need scalable Web Apps, Mobile Apps API apps, Logic Apps etc then They can use Azure App service.

2. Differentiate Azure Container Instances and Azure Kubernetes Service
   Azure Container Instances

   Offers simple way to run containers in Azure Cloud without
   need of Virtual Machines or using more complex container orchestration services. Moreover, containers are becoming preferred way to package, deploy and manage cloud applications.
   Unlike VMs, Containers Instances can start in seconds and are more efficient.
   Azure container instances are more suited for simple container-based workloads such as small-scale apps, build jobs and task automation.

   Azure Kubernetes Service
   Kubernetes is a fast-growing platform for managing containerized applications, storage, and networking components. It allows developers and administrators to focus on application workloads, not infrastructure components. Kubernetes provides a convenient, declarative way to deploy large numbers of containers, with a powerful set of APIs for management tasks.
   Azure Kubernetes Service (AKS) manages your hosted Kubernetes environment, making it quicker and easier for you to deploy and manage containerized applications.

   This service also eliminates the burden of ongoing operations and maintenance by provisioning, upgrading, and scaling resources on-demand, without taking your applications offline.
   AKS is the best way to simplify and streamline Kubernetes so you can scale your app development with real confidence and agility.

3. What is the Azure function? Explain in brief.

Azure function is a cloud-based service available on demand which provides all continues infrastructure/resources to run any application.
Azure functions are best suited for small apps having events that can function independently of other websites.

Basically, Azure functions are serverless solution that allows users to write minimum coding, manage less infra and besides cost saving opportunities.

few scenarios for azure functions

- Build a web API
- Build serverless workflow
- Run scheduled tasks
- Creating message queue systems
- Collect /process data from IoT devices

We have 4 diff types of Azure functions -activity, orchestrator, entity and client.

4. What is Azure Virtual Desktop?

Azure virtual desktop is a desktop /app virtualization service that runs on cloud platform
With Azure virtual desktop we can deploy for instance, multisession Win 10 /Win 11 image
Which delivers a complete windows experience. Also allowing users to navigate to Microsoft 365 apps which runs in multiuser virtual scenarios
Once users are assigned to virtual desktop – they have option of accessing multiple app groups from virtual desktop via any device.

Few key capabilities:

- Creating full desktop virtualization environment
- Creating host pool to manage workloads
- Creating own image (Win/Linux) from Azure gallery
- Cost effective with the pooled, multi-session resources where Win 10/11 multi-session capability can reduce large no of virtual m/c and OS
- Autoscaling feature to increase or decrease capacity (day/week) for users

5. What is Azure virtual networking? Explain in detail.

Azure virtual networking: Its representation of our own network in cloud which enables many Types of Azure resources – for instance Vm, web apps, data base to securely communicate with each other. Almost similar to traditional data center in our companies but also incl additional benefits such as scalability, availability , isolation.
Key components of Virtual network incl:

- Subnets
- Ip addressing

- NSG: Network Security Group
- Firewall
- Load Balancing
- Routing Tables

6. Explain Azure VPN gateway

Azure gives possibility of working in hybrid work environment where users can integrate servers /physical equipment of org with the cloud.
Azure VPN gateway connects on premises to Azure through Site-to-Site VPNs in a similar way like connecting to our remote branch office.

Azure VPN Gateway
The VPN Gateway service allows you to connect the virtual network to the local area network using a VPN device. This service includes the following elements:

Virtual network gateway
The resource that provides a virtual VPN device for the virtual network.
It is responsible for routing traffic from the local area network to the virtual network.

Local area network gateway
Abstraction of the local VPN device. Network traffic from the application in the cloud to the local area network is routed through this gateway.

Connection
The connection has properties that specify the type of connection (IPsec) and the shared key with the local VPN device to encrypt traffic.

Gateway subnet
The virtual network gateway is maintained on its own subnet.