**50 Azure Cloud Architect Interview Questions & Answers (Basic to Intermediate)**

**1. What is Microsoft Azure?**

**Answer:** Microsoft Azure is a cloud computing platform and service created by Microsoft, offering solutions such as IaaS, PaaS, and SaaS for building, testing, deploying, and managing applications and services.

**2. What are the different types of cloud computing models in Azure?**

**Answer:**

* **IaaS (Infrastructure as a Service)**
* **PaaS (Platform as a Service)**
* **SaaS (Software as a Service)**

**3. What is Azure Resource Manager (ARM)?**

**Answer:** ARM is a management framework that allows users to deploy, manage, and monitor all Azure resources in a single, unified platform.

**4. What is Azure Active Directory (Azure AD)?**

**Answer:** Azure AD is a cloud-based identity and access management service that helps employees sign in and access resources securely.

**5. What is the difference between Azure AD and Active Directory?**

**Answer:** Azure AD is cloud-based and used for SaaS applications and cloud resources. Active Directory is on-premises and used for Windows domain networks.

**6. What is a Resource Group in Azure?**

**Answer:** A Resource Group is a container that holds related resources for an Azure solution. It allows easier management, monitoring, and billing.

**7. What is the Azure Virtual Network (VNet)?**

**Answer:** Azure VNet is the fundamental building block for private networks in Azure. It allows communication between Azure resources.

**8. What are Network Security Groups (NSGs)?**

**Answer:** NSGs contain a list of security rules that allow or deny network traffic to resources in a VNet.

**9. What is Azure ExpressRoute?**

**Answer:** ExpressRoute allows private connections between Azure datacenters and on-premises infrastructure, not over the public internet.

**10. Explain Azure Availability Set.**

**Answer:** It ensures that VMs deployed within are distributed across multiple isolated hardware nodes in a cluster to avoid single points of failure.

**11. What is Azure Load Balancer?**

**Answer:** It distributes incoming traffic among healthy VMs and helps in improving application availability.

**12. What is Azure Application Gateway?**

**Answer:** A web traffic load balancer with SSL termination, cookie-based session affinity, and web application firewall.

**13. Explain Azure Storage types.**

**Answer:**

* Blob Storage
* Table Storage
* Queue Storage
* File Storage
* Disk Storage

**14. What is Azure Blob Storage?**

**Answer:** It stores unstructured data like images, video, and audio as objects/blobs.

**15. What is Azure Site Recovery?**

**Answer:** A disaster recovery service that replicates workloads running on physical and virtual machines to a secondary location.

**16. What is Azure Monitor?**

**Answer:** A full-stack monitoring service for collecting, analyzing, and acting on telemetry from cloud and on-premises environments.

**17. What is Azure Security Center?**

**Answer:** A unified infrastructure security management system that strengthens the security posture of your data centers.

**18. What is Azure Policy?**

**Answer:** Azure Policy is used to create, assign, and manage policies that enforce different rules and effects over resources.

**19. What is Azure Cost Management?**

**Answer:** It helps monitor, allocate, and optimize cloud spend and identify spending anomalies.

**20. What are Azure Tags?**

**Answer:** Name-value pairs assigned to resources for categorization and cost tracking.

**21. What is Azure ARM Template?**

**Answer:** JSON-based files used to define the infrastructure and configuration for Azure resources.

**22. What is Azure Bicep?**

**Answer:** A domain-specific language (DSL) for deploying Azure resources declaratively using simpler syntax than ARM.

**23. What is Azure DevOps?**

**Answer:** A suite of services for DevOps practices including CI/CD, version control, project management, etc.

**24. What is Infrastructure as Code (IaC)?**

**Answer:** Managing and provisioning infrastructure using code instead of manual processes.

**25. Explain Azure Virtual Machine Scale Sets.**

**Answer:** It allows you to deploy and manage a set of auto-scaling VMs with load balancing.

**26. What are Azure Managed Disks?**

**Answer:** Storage for Azure VMs managed by Azure, handling storage accounts and disk replication automatically.

**27. What is Azure Kubernetes Service (AKS)?**

**Answer:** Managed Kubernetes container orchestration service.

**28. What is Azure Functions?**

**Answer:** A serverless compute service that enables you to run code on-demand without managing infrastructure.

**29. What is Azure Logic Apps?**

**Answer:** A cloud service that helps automate workflows and integrate systems and services.

**30. What are Service Principals in Azure?**

**Answer:** Identities used by applications or services to access specific Azure resources.

**31. What is Azure Lighthouse?**

**Answer:** A service that allows service providers to manage multiple tenants securely from a single portal.

**32. What is Azure Blueprints?**

**Answer:** Enables you to define a repeatable set of Azure resources with policies, ARM templates, and RBAC.

**33. Explain Azure Hybrid Benefit.**

**Answer:** Allows use of on-premises licenses (like Windows Server or SQL Server) on Azure to save costs.

**34. What is Azure Bastion?**

**Answer:** A PaaS service to securely connect to VMs through the Azure portal without exposing them to the public internet.

**35. What is the difference between Azure CLI and Azure PowerShell?**

**Answer:** CLI uses commands similar to Linux shell, whereas PowerShell is an object-oriented scripting language.

**36. What is RBAC in Azure?**

**Answer:** Role-Based Access Control allows you to manage who has access to Azure resources and what they can do.

**37. What is Conditional Access in Azure AD?**

**Answer:** It enables automated access control decisions based on conditions like location, device state, or risk level.

**38. Explain Azure Private Link.**

**Answer:** Enables private access to Azure PaaS services over the VNet.

**39. What is Azure VNet Peering?**

**Answer:** Connects two VNets for private traffic between them using Microsoft’s backbone network.

**40. What is a Service Endpoint?**

**Answer:** Extends your VNet private address space to Azure services over the Azure backbone.

**41. What is Azure DNS?**

**Answer:** A hosting service for DNS domains, allowing name resolution using Microsoft Azure infrastructure.

**42. What is Azure API Management?**

**Answer:** A platform for managing, publishing, and securing APIs.

**43. What is Azure Synapse Analytics?**

**Answer:** An analytics service that brings together big data and data warehousing.

**44. What is Azure Data Factory?**

**Answer:** A cloud-based ETL and data integration service.

**45. What is Azure Key Vault?**

**Answer:** A service to securely store and manage secrets, keys, and certificates.

**46. What is Azure Front Door?**

**Answer:** A scalable entry point for global web applications with built-in load balancing, SSL offloading, and web application firewall.

**47. What is Azure App Service?**

**Answer:** A PaaS offering for hosting web apps, REST APIs, and mobile backends.

**48. How can you secure Azure VMs?**

**Answer:**

* Use NSGs
* Enable Just-in-Time VM Access
* Use Azure Bastion
* Apply Endpoint Protection
* Enable Disk Encryption

**49. What is the Shared Responsibility Model in Azure?**

**Answer:** It defines the security responsibilities between Microsoft (for the infrastructure) and the customer (for data and access).

**50. What is the role of a Cloud Architect in Azure projects?**

**Answer:** Designing cloud solutions, choosing right services, ensuring cost efficiency, implementing governance, security, and helping in deployment and migration strategies.