**Q1.** What is the main principle behind GitOps?  
a) Using Git only for CI pipelines  
b) Treating Git as the single source of truth for deployments ✅  
c) Using Git for code versioning only  
d) Replacing Kubernetes with Git

**Q2.** Which of the following best describes GitOps?  
a) A CI/CD tool alternative  
b) A methodology that manages infrastructure and applications declaratively via Git ✅  
c) A monitoring solution for Kubernetes  
d) A container orchestration system

**Q3.** Flux CD is mainly used for:  
a) Monitoring logs in Kubernetes  
b) Automating GitOps workflows ✅  
c) Scaling Kubernetes clusters  
d) Building container images

**Q4.** In Flux CD, the term "Reconciliation" means:  
a) Comparing two Git branches  
b) Aligning the actual cluster live state with the desired state ✅  
c) Rolling back application versions  
d) Creating container images

**Q5.** Which namespace does Flux create during bootstrap by default?  
a) kube-flux  
b) flux-system ✅  
c) flux-namespace  
d) kube-system

**Q6.** Which command initializes Flux on a Kubernetes cluster?  
a) flux init  
b) flux bootstrap ✅  
c) flux install  
d) flux setup

**Q7.** Flux CLI subcommand used to pause a resource is:  
a) flux suspend ✅  
b) flux stop  
c) flux hold  
d) flux block

**Q8.** What is required before installing Flux CD?  
a) Docker Hub account  
b) A Kubernetes cluster ✅  
c) GitHub Pages site  
d) Helm chart repo

**Q9.** Flux CD is built around:  
a) Controllers and Custom Resources ✅  
b) Daemons and Agents  
c) StatefulSets and Services  
d) CI jobs

**Q10.** Which controller in Flux manages communication with Git repositories?  
a) Notification Controller  
b) Source Controller ✅  
c) Helm Controller  
d) Image Controller

**Q11.** The Source Controller is responsible for:  
a) Scaling applications  
b) Fetching and managing sources ✅  
c) Monitoring cluster logs  
d) Installing Kubernetes

**Q12.** Kustomize Controller applies:  
a) Helm charts only  
b) Docker images  
c) Kubernetes manifests ✅  
d) Terraform modules

**Q13.** Which command suspends a Kustomization?  
a) flux pause  
b) flux suspend kustomization ✅  
c) flux delete kustomization  
d) flux resume kustomization

**Q14.** Declarative configs in Flux CD are usually written in:  
a) JSON  
b) YAML ✅  
c) TOML  
d) INI

**Q15.** To integrate a private Git repository with Flux CD, you typically use:  
a) GitHub Actions  
b) SSH keys or tokens ✅  
c) Docker credentials  
d) Kubeconfig

**Q16.** Flux CD supports deployments using:  
a) Helm  
b) Kustomize  
c) Both Helm and Kustomization ✅  
d) Neither

**Q17.** In Flux, which controller handles Helm releases?  
a) Source Controller  
b) Helm Controller ✅  
c) Kustomize Controller  
d) Notification Controller

**Q18.** Deploying an app from a Helm repository in Flux requires defining a:  
a) HelmRepository resource ✅  
b) Kustomization resource  
c) Pod resource  
d) ServiceAccount resource

**Q19.** OCI Registry can store:  
a) Container Images  
b) Helm Charts  
c) Kubernetes Manifests  
d) All of the above ✅

**Q20.** Flux resource for consuming artifacts from OCI Registry is:  
a) HelmRepository  
b) GitRepository  
c) OCIRepository ✅  
d) OCIController

**Q21.** Which Flux controller works with OCI artifacts?  
a) Source Controller ✅  
b) Helm Controller  
c) Notification Controller  
d) Image Automation Controller

**Q22.** The Image Reflector Controller in Flux CD:  
a) Builds container images  
b) Scans container registries for image updates ✅  
c) Deletes old images  
d) Runs CI pipelines

**Q23.** The ImagePolicy resource in Flux defines:  
a) Which Kubernetes objects to patch  
b) How to select a specific container image version ✅  
c) How to build a Docker image  
d) Which Git branch to track

**Q24.** Which resource automates updating manifests with the latest image?  
a) ImageRepository  
b) ImageUpdateAutomation ✅  
c) ImagePolicy  
d) GitRepository

**Q25.** The Notification Controller in Flux CD is used for:  
a) Scaling deployments  
b) Sending events and alerts ✅  
c) Building Docker images  
d) Deploying Helm charts

**Q26.** Which Flux resource is used to receive external webhooks?  
a) Provider  
b) Receiver ✅  
c) Alert  
d) Notification

**Q27.** To integrate Flux notifications with MS Teams, you configure:  
a) A HelmRelease  
b) A Provider ✅  
c) A GitRepository  
d) A Kustomization

**Q28.** Flux CD exposes metrics for monitoring through:  
a) Prometheus ✅  
b) Grafana only  
c) Elasticsearch  
d) Loki

**Q29.** Flux UI (Capacitor) is designed for:  
a) Lightweight Flux visual interface ✅  
b) Logging events  
c) Building Helm charts  
d) Container scanning

**Q30.** Weave GitOps provides:  
a) A commercial and open-source Flux UI ✅  
b) A CLI tool for Flux only  
c) Only Helm-based deployments  
d) Monitoring and logging stack

**Q31.** Which is a best practice for securing Flux CD?  
a) Run Flux controllers as root  
b) Use least-privileged access ✅  
c) Disable authentication  
d) Store secrets in GitHub public repo

**Q32.** Sensitive data in Flux should be managed using:  
a) Kubernetes Secrets + Sealed Secrets ✅  
b) ConfigMaps only  
c) Plain YAML in Git  
d) Docker environment variables

**Q33.** Which GitOps security measure ensures auditability?  
a) Enabling kubectl exec  
b) Git commit history ✅  
c) Disabling TLS  
d) Running Flux as cluster-admin always

**Q34.** Which command lists Flux resources in a cluster?  
a) kubectl get flux  
b) flux get all ✅  
c) flux resources  
d) kubectl flux

**Q35.** To troubleshoot Flux issues, you often use:  
a) flux logs ✅  
b) flux events  
c) flux describe  
d) kubectl debug

**Q36.** Flux CD primarily follows which model?  
a) Push model  
b) Pull model ✅  
c) Hybrid model  
d) Agentless model

**Q37.** Which Flux CLI command forces reconciliation?  
a) flux force  
b) flux reconcile ✅  
c) flux reload  
d) flux apply

**Q38.** What is the benefit of GitOps with Flux CD?  
a) Reduced monitoring  
b) Declarative, auditable, and automated deployments ✅  
c) Manual deployments only  
d) Faster container builds

**Q39.** Which Flux controller integrates with Prometheus for alerting?  
a) Notification Controller ✅  
b) Source Controller  
c) Helm Controller  
d) Image Controller

**Q40.** A common Flux CD troubleshooting step is:  
a) Restarting kube-apiserver  
b) Checking reconciliation logs ✅  
c) Deleting flux-system namespace  
d) Reinstalling Docker

**Q41.** Which Flux command removes a resource from cluster?  
a) flux stop  
b) flux delete ✅  
c) flux remove  
d) flux suspend

**Q42.** Which of these is NOT a Flux controller?  
a) Source Controller  
b) Image Reflector Controller  
c) Deployment Controller ✅  
d) Notification Controller