**📘 DevOps Final Revision Pack**

**⚡ DevOps Rapid Revision Sheet**

**Docker**

* OS-level virtualization, shares host kernel.
* Lightweight, portable, faster than VMs.
* Persist data using **Volumes** or **Bind Mounts**.
* Common cmds: docker run, docker ps, docker exec, docker logs.

**Jenkins**

* CI/CD automation server.
* Pipelines: **Declarative** (simple) vs **Scripted** (flexible).
* Integrates with GitHub via plugins + webhooks.
* **Agents** execute jobs, **Controller** orchestrates.

**Git**

* reset = rewrites history (unsafe), revert = new commit (safe).
* Branching strategies: **Feature**, **Gitflow**, **Trunk-based**.
* Merge conflicts: fix → git add → git commit.

**Terraform**

* Infrastructure-as-Code tool.
* State stored in terraform.tfstate.
* plan = preview, apply = execute.
* Use **modules** for reusability.
* Remote state (e.g., S3, GCS) for team collaboration.

**Kubernetes**

* **Deployment** = stateless apps, **StatefulSet** = stateful apps.
* Service types: ClusterIP, NodePort, LoadBalancer.
* **Ingress Controller** manages external traffic.
* Debug: kubectl get pods, kubectl describe pod <name>.

**Prometheus & Grafana**

* Prometheus = metrics collection (**pull model**).
* **Alertmanager** = alert routing (Slack, Email, PagerDuty).
* Grafana = dashboards & visualization.

**Ansible**

* Agentless, uses **SSH**.
* **Playbook** = tasks, **Role** = reusable playbooks.
* **Ansible Vault** for secrets (ansible-vault encrypt file.yaml).
* **Idempotent**: safe to run same task multiple times.

**🔥 Top 10 Likely Interview Questions (Quick Answers)**

**Q1. Docker vs VM?**  
➡ Docker = OS-level virtualization, shares kernel. VM = hardware-level, full OS. Docker = lightweight, faster, portable.

**Q2. Jenkins pipeline types?**  
➡ Declarative (simpler, structured) vs Scripted (flexible, Groovy-based).

**Q3. Git reset vs revert?**  
➡ Reset rewrites history (unsafe for shared repos). Revert adds a new commit (safe).

**Q4. Terraform plan vs apply?**  
➡ Plan shows changes, Apply executes them.

**Q5. Kubernetes Deployment vs StatefulSet?**  
➡ Deployment = stateless apps. StatefulSet = apps needing stable identity/storage.

**Q6. Prometheus vs Grafana?**  
➡ Prometheus = metrics collection & alerts. Grafana = visualization & dashboards.

**Q7. Ansible vs Terraform?**  
➡ Ansible = config management (procedural). Terraform = infra provisioning (declarative).

**Q8. What is CI/CD?**  
➡ CI = integrate code + automated testing. CD = continuous delivery/deployment to prod.

**Q9. Blue-Green vs Rolling Deployment?**  
➡ Blue-Green = 2 environments, switch traffic instantly. Rolling = gradually replace old pods with new.

**Q10. How do you ensure secrets management in DevOps?**  
➡ Vault tools (HashiCorp Vault, Ansible Vault, K8s secrets), avoid hardcoding in repos.