Q2: Jenkins Pipeline for a Web Project (Full Explanation)

1. Install Jenkins and required plugins (Git, Pipeline, SSH Agent).
2. Create GitHub repo with your web code.
3. Add deployment server credentials in Jenkins (SSH private key).
4. Create Jenkinsfile in repo to automate clone, build, deploy.
5. Create Jenkins Pipeline job and select Pipeline from SCM.
6. Run pipeline and verify deployment.

Sample Jenkinsfile:

```
pipeline {
agent any
stages {
stage('Clone Repository') {
steps { git branch: 'main', url: 'https://github.com/Janardhan-yadav/webapp.git' }
}
stage('Build') { steps { sh "zip -r webapp.zip ." } }
stage('Deploy to WebServer') {
steps {
sshagent(credentials: ['webserver-key']) {
sh '''
scp -o StrictHostKeyChecking=no webapp.zip ubuntu@:/tmp/
ssh ubuntu@ "sudo unzip -o /tmp/webapp.zip -d /var/www/html/"
'''
}
}
}
stage('Verify') {
steps { echo "Visit: http://" }
}
}
}
```

Q3: Minikube Nginx Deployment (Full Explanation)

1. Start Minikube:

```
minikube start
```

2. Deploy Nginx:

```
kubectl create deployment nginx-deployment --image=nginx
```

3. Expose Nginx service:

```
kubectl expose deployment nginx-deployment --type=NodePort --port=80
```

4. Access service:

```
minikube service nginx-deployment --url
```

5. Scale deployment to 4 pods:

```
kubectl scale deployment nginx-deployment --replicas=4
```

6. Verify running pods:

```
kubectl get pods
```