Part 1:

```
pvcreate /dev/sda2 /dev/sda3                    #create physical memories
vgcreate -s 16M vg1 /dev/sda2 /dev/sda3         #create volume group vg1 and set 16M extends
lvcreate -l 50 -n lvm02 /dev/vg1                #create a logical volume with 50 extends
mkfs -t ext4 /dev/vg1/lvm02                     #create a new file system and make it ext4
mkdir -p /mnt/data                              #create mounting directory
vim /etc/fstab                                  #open fstab file
/dev/vg1/lvm02 /mnt/data ext4 defaults 0 0      #assign lvm02 to be mounted automatically in
                                                #mnt/data
mount -a                                        #mount the mentioned volumes in the file
```

Part 2:

1+2)

```
useradd user1                                   #create user1
passwd user1                                    #change password to redhat
vim /etc/ssh/sshd_config                        #open sshd_config to remove user1 ssh access
                                                #add DenyUsers user1 line to the file
groupadd TrainingGroup                          #create the group TrainingGroup
usermod -a -G TrainingGroup user1               #assign user1 to TrainingGroup group
usermod -u 601 user1                            #change user1 id to 601
cat /etc/passwd | less                          #check changes
systemctl restart sshd                          #restart ssh service to apply changes
ssh user1@172.20.30.30                          #attempt ssh connection for user1
                                                #Permission denied, please try again.
```

3)

```
useradd user2                                   #create user2
useradd user3                                   #create user3
groupadd admin                                  #create admin group
usermod -a -G admin user2                       #assign user2 to admin group
usermod -a -G admin user3                       #assign user3 to admin group
passwd user2                                    #change password to redhat
passwd user3                                    #change password to redhat
visudo                                          #open visudo file to change user3 permissions
                                                #add the line (user3   ALL=(ALL)       ALL) to give
                                                #full root permissions
```

Part 3:

```
On machine 1:
ssh-keygen -t rsa                               #generate ssh key
cat /root/.ssh/id_rsa.pub                       #open id_rsa.pub to copy public key

On machine 2:
```

```
vim /root/.ssh/authorized_keys          #open authorized_keys file and paste the public
                                        #key in it

ssh root@172.20.30.30                   #attempt ssh connection
```

Part 4:

```
cp /etc/fstab /var/tmp/                 #copy file
mv /var/tmp/fstab /var/tmp/admin        #change file name to “admin”
setfacl -m u:user1:rwx /var/tmp/admin   #allow user1 to fully access the file
setfacl -m u:user2:--- /var/tmp/admin   #deny user2 from all access to the file
```

Part 5:

```
vim /etc/selinux/config                 #edit config file
                                        #edit line ( SELINUX=enforcing )
```

Part 6:

```
vim script.sh                           #create a script file and fill it with a script that runs
                                        #for 10 minutes

sh script.sh &                          #execute script in the background
ps                                      #check for the process id
kill 27525                              #kill the process using its id
ps
```

Part 7:

```
cd /var/www/html/pub/zabbixzone/6Server/x86_64/
wget -q -r -t1 --no-parent -nd --mirror https://repo.zabbix.com/zabbix/4.4/rhel/7/x86_64/
                                        #download all packages to local machine
mkdir -p /home/mypackage_dir/repository #make directory for repository
cp * /home/mypackage_dir/repository     #copy all package files to the new directory
createrepo /home/mypackage_dir/repository/
                                        #create the repository
vi /etc/yum.repos.d/customrepo.repo     #create the repo file for the repository and fill it with
                                        #the following:
```

```
[local]
name=My RPM System Package Repo
baseurl=file:///home/mypackage_dir/repository
enabled=1
gpgcheck=0
```

```
yum-config-manager --disable *          #disable all the repositories
yum-config-manager --enable local       #enable the new repository
yum install zabbix-web                  #install the packages
```

yum install zabbix-server
yum install zabbix-agent

Part 8:

firewall-cmd --zone=public --add-port=80/tcp --permanent
#add port 80 and make changes permanent
firewall-cmd --zone=public --add-port=443/tcp --permanent
#add port 443 and make changes permanent

Part 9:

vim /home/cronscript.sh #create a script file and write a script that will output
logged in users to a file
chmod +x /home/cronscript.sh #make the file executable
crontab -e #open the crontab scheduler and assign the file to
#execute at 1:30 AM
#(30 1 * * * /home/cronscript.sh)

Part 10:

yum install mariadb-server #install the package
ifirewall-cmd --zone=public --add-port=3306/tcp --permanent
#add the port
systemctl start mariadb.service #starting the service
systemctl enable mariadb.service #enabling the service
mysql -u root -p #connect to mariadb using ‘root’

On machine 1:

```
MariaDB [(none)]> CREATE USER user2@172.20.30.35 IDENTIFIED BY 'mariadb';
MariaDB [(none)]> GRANT ALL on *.* TO user2 IDENTIFIED BY 'mariadb';
MariaDB [(none)]> CREATE DATABASE studentdb;
```

On machine 2:

mysql -h 172.20.30.30 -u user2 -p #connect to mariadb on 172.20.30.30 using ‘user2’

```
MariaDB [(none)]> USE studentdb;
MariaDB [studentdb]> CREATE TABLE students (firstname VARCHAR(20), lastname
VARCHAR(20), program VARCHAR(40), expgrad SMALLINT UNSIGNED, number
VARCHAR(7) NOT NULL,PRIMARY KEY(number));
MariaDB [studentdb]> INSERT INTO students (firstname,lastname,program,expgrad,number)
 VALUE
('Allen','Brown','mechanical',2017,'110-001'),('David','Brown','mechanical',2017,'110
```

```
-002'),('Mary','Green','mechanical',2018,'110-003'),('Dennis','Green','electrical',20
18,'110-004'),('Joseph','Black','electrical',2018,'110-005'),('Dennis','Black','elect
rical',2020,'110-006'),('Ritchie','Salt','computer
science',2020,'110-007'),('Robert','Salt','computer
science',2020,'110-008'),('David','Suzuki','computer
science',2020,'110-009'),('Mary','Chen','computer science',2020,'110-010');
```