Question 1: Explain this following bash script:

```
#!/bin/bash
space_free=$( df -h | awk '{ print $5 }' | sort -n | tail -n 1 | sed 's/%//' )
case $space_free in
[1-5]*)
echo Plenty of disk space available
;;
[6-7]*)
echo There could be a problem in the near future
;; 8*) echo Maybe we should look at clearing out old files
;; 9*) echo We could have a serious problem on our hands soon
;;
*)
echo Something is not quite right here
;;
esac
```

Answer :-

space_free=$(df -h | awk '{ print $5 }' | sort -n | tail -n 1 | sed 's/%//')

space_free = amount of free space on the disk in percentage and stores it in the variable.

df -h = shows the disk usage in human-readable format.

awk '{ print $5 }' = extracts the fifth column from the output, which contains the percentage of disk space used.

sort -n = sorts the percentages in ascending order.

tail -n 1 = gets the last line of the output, which contains the highest percentage of disk space used.

sed 's/%//' = removes the percentage symbol from the percentage value so that it can be used in the case statement.

This script checks the amount of free space on a disk and prints a message based on the amount of space available. If the disk usage is less than 50%, it prints "Plenty of disk space available". If the disk usage is between 50% and 70%, it prints "There could be a problem in the near future". If the disk usage is between 80% and 89%, it prints "Maybe we should look at clearing out old files". If the disk usage is between 90% and 100%, it prints "We could have a serious problem on our hands soon". If none of these conditions

are met, it prints "Something is not quite right here".