

Question 1:

```
#!/bin/bash

arr1=(1 3 5 7 9)
arr2=(2 4 6 8)
merged=()

i=0
j=0

while [[ $i < ${#arr1[@]} && $j < ${#arr2[@]} ]]; do
    if [[ ${arr1[i]} < ${arr2[j]} ]]; then
        merged+=(${arr1[i]})
        ((i++))
    else
        merged+=(${arr2[j]})
        ((j++))
    fi
done

while (( i < "${#arr1[@]}" )); do
    merged+=(${arr1[i]})
    ((i++))
done

while (( j < "${#arr2[@]}" )); do
    merged+=(${arr2[j]})
    ((j++))
done

for ((k=0; k<${#merged[@]}; k++));
do
    echo "${merged[k]}"
done
```

Question 2:

```
#!/bin/bash

declare -A freq

arr=(1 2 2 3 3 3)

for e in "${arr[@]}"; do
    ((freq[$e]++))
done

for e in "${freq[@]}"; do
    echo "$e: ${freq[$e]}"
done
```

Question 3:

```
#!/bin/bash

arr=(1 2 3 4 5)
rev=()

for ((i=$(( ${#arr[@]} - 1 )); i>=0; i--)); do
    rev+=(${arr[i]})
done

for ((i=0; i<${#rev[@]}; i++));
do
    echo "${rev[i]}"
done
```

Question 4:

```
#!/bin/bash

arr=(2 1 3 9 4 5 7 6)

largest=${arr[0]}
second_largest=${arr[0]}
smallest=${arr[0]}
second_smallest=${arr[0]}

for e in ${arr[@]};
do
    if [[ $e < $smallest ]]; then
        second_smallest=$smallest
        smallest=$e
    elif [[ $e < $second_smallest ]] && [[ $e != $smallest ]]; then
        second_smallest=$e
    fi

    if [[ $e > $largest ]]; then
        second_largest=$largest
        largest=$e
    elif [[ $e > $second_largest ]] && [[ $e != $largest ]]; then
        second_largest=$e
    fi
done

echo "Second Largest: $second_largest"
echo "Second Smallest: $second_smallest"
```

Question 5:

```
#!/bin/bash

arr=(1 2 3 2 1)

palindrome=true
n=${#arr[@]}

for ((i=0; i<n; i++)); do
    bi=$((n - i - 1))
    if [[ ${arr[i]} != ${arr[bi]} ]]; then
        palindrome=false
        break
    fi
done

if [[ $palindrome = true ]]; then
    echo "It's a palindrome"
else
    echo "It's not a palindrome"
fi
```