Q - 1)Below are nested “K” for loops (3 marks)

```
n= int(input(“Enter the limit”))
for i in range(n):
        for j in range(n):
                for l in range(n):
                        …
                                …
                                        …
                                                K for loops in total
                                                                        …
                                                                                …
                                                                                        …
                                                                                        for z in range(n):
                                                                                                print(“Time complexity”)
```

Ans - O(n^K)

Q - 2) Recursive function (3 marks)

```
n= int(input(“Enter the limit”))
def func(n):
        if n>=1:
                func(n-1)
                print(“Time complexity”)
```

Ans - There is infinite loop so there is no time complexity

Q - 3) (3 marks)

```
n= int(input(“Enter the limit”))
i = 1
while(i^2<=n):
        print(“Time complexity”)
        i += 1
```

Ans - O(log n)

Q - 4) (3 marks)

```
N= int(input(“Enter the limit”))
M= int(input(“Enter the limit”))
a = b = 0
for i in range(N):
a = a + 1
for j in range(M):
```

```
b = b + rand()
```

Ans - O(N+M)

Q - 5) (3 marks)

```
n= int(input(“Enter the limit”))
for i in range(n):
        for j in range(i):
                for k in range(100):
                        print(“Time complexity”)
```

Ans - O(n^3)

Q - 6) [BONUS QUESTION] (6 marks)

```
n= int(input(“Enter the limit”))
for i in range(n):
        j = 1
        while(j<=i^2):
                for k in range(n/2):
                        print(“Time complexity”)
```

Ans - O(1)