Register Number	21BCE1955	Subject Code	BCSE308P
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Programme	CSE core	Slot	L1+L2
Course	Computer networks	Semester	Winter semester 2023

Lab Exercise 9

a) Code

```python
import ipaddress
a=input("Enter the ip address:")
str(ipaddress.ip_address(a))
ip=ipaddress.ip_address(a)
short=ip.compressed
print("The shortened ip address is:",short)
```

Output

```
Enter the ip address:0000:0000:ffff:ffff:0000:0000:0000:efd1
The shortened ip address is: 0:0:ffff:ffff::efd1
```

b) Code

```
a=input("Enter mac address:")
l=a.split(":")
l.insert(3,'ff')
l.insert(4,'fe')
res = "{0:08b}".format(int(l[0], 16))
res1 = "{0:08b}".format(int('2', 16))
bi=str(int(res)+int(res1))
num = int(bi, 2)
hex_num = format(num, 'x')
l[0]=hex_num
print("The ip address is: fe:80::",end="")
print(":".join(l))
```

Output

```
Enter mac address:88:88:88:88:88:88
The ip address is: fe:80::8a:88:88:ff:fe:88:88:88
>
```