Bar Graph.

```
import matplotlib.pyplot as plt.
X=[1,2,3,4,5]
Y=[5,25,45,30,15]
tick_label=['Pune','Mumbai','Nagpur',
 'Nashik','Satara']
plt bar(X,Y,tick_label=tick_label,width=
    0.8, color=['red','green']
plt xlabel=['Pune','Mumbai','Nagpur',
  'Nashik','Satara']
plt Ylabel('Number of covid patients
            (in thousands'))
plt.title('covid-19 Data')
plt.show()
```

2.

course	1	2	3	4	5	6	7	8	9	10	11	12
Intake	240	80	160	80	160	80	80	360	120	120	60	60

```
import matplotlib.pyplot as plt.
x=[1,2,3,4,5,6,7,8,9,10,11,12]
y=[240,80,160,80,160,80,80,360,120,120,
    60,60]
tick_label=['BCS','BCOM','BBA','BCA','CA',
   'LLB','MBA','MCS','MCA','BSC','MBBS','BA']
plt.bar(x,y,tick_label=tick_label,width=
   0.9,color=['red','green','blue'])
plt.xlabel=('BCS,BCOM,BBA,BCA,CA,LLB,
      MBA,MCS,MCA,BSC,MBBS,BA')
plt.ylabel('courses')
```

plt.title('number')
plt.show()

Q.

Subject	Maths	Science	English	Marathi	Hindi
% of passing	68	90	70	85	91

⟹
```
import matplotlib.pyplot as plt.
X=[1,2,3,4,5]
Y=[68,90,70,85,91]
tick_label=['Maths','Science','English','Marathi'
            'Hindi']
plt.bar(X,Y, tick_label=tick_label, width=
    0.6, color=['green'])
plt.xlabel=['Maths,Science,English,Marathi,
            Hindi']
plt.ylabel('Subjects')
plt.title('Percentage')
plt.show().
```

Q. Write a python program to plot 3D graph of the f^n $f(x)=\sin(x^2+y^2)$ in $-2\pi < x, y < 2\pi$.

⟹
```
import mpl_toolkits import mplot3D
import numpy as np.
from pylab import*
def f(x,y):
```

NAME:-

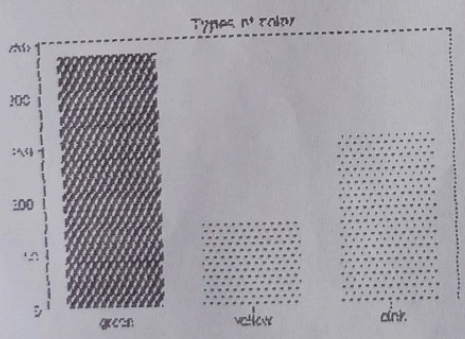
CLASS:-

ROLL:-

SEAT no:-

TITLE:-

```
import matplotlib.pyplot as plt
x=[1,2,3]
y=[240,80,160]
tick_label=['green','yellow','pink']
plt.bar(x,y,tick_label=tick_label,width=0.7,color=['green','yellow','pink'])
plt.xlabel=('green','yellow','pink')
plt.ylabel=('color name')
plt.title('Types of color')
plt.show()
```



NAME:- MANISHA SHRISHAIL BIRADAR

CLASS:-

ROLL:- 41320

SEAT no:-

TITLE:-

```
import matplotlib.pyplot as plt

x=[1,2,3,4,5,6,7,8,9,10,11,12]

y=[240,80,160,80,160,80,80,360,120,120,60,60]

tick_label=['Bsc(cs)','Bsc(I.T)','BBA-CA','BCA-Sci','BBA-
IB','BA','B.COM','ART','B.T','M.com','M.A','MSC']

plt.bar(x,y,tick_label=tick_label,width=0.5,color=['blue','red','green'])

plt.xlabel=('Bsc(cs)','Bsc(I.T)','BBA-CA','BCA-Sci','BBA-
IB','BA','B.COM','ART','B.T','M.com','M.A','MSC')

plt.ylabel=('cources')

plt.title('list')

plt.show()
```