Program :-

```
import pandas as pd
df = pd.read_csv(r'/home/student/Desktop/sinan/Heart_disease_cleveland_new.csv')
cor1= df.corr()
cor= cor1['target'].sort_values(ascending=False)
top5= cor.index[1:6]
print("Top 5 attributes closely related to the target:")
print(cor[top5])
cov1= df[top5].cov()
print("\nCovariance matrix for the top 5 attributes:")
print(cov1.head())
print("\nCorrelation matrix for the top 5 attributes:")
print(df[top5].corr())
top2= cor[1:4]
print("\nTop 3 most important attributes:\n",top2)
```

Output :-

```
(base) student@cseadmin:~/Desktop/sinan$ python3 corcov.py
Top 5 attributes closely related to the target:
thal      0.515894
ca        0.460033
exang     0.431894
oldpeak   0.424510
cp        0.414446
Name: target, dtype: float64

Covariance matrix for the top 5 attributes:
           thal       ca    exang   oldpeak       cp
thal    0.915284  0.221297  0.144581  0.370926  0.238673
ca      0.221297  0.873058  0.063996  0.326621  0.209134
exang   0.144581  0.063996  0.220707  0.157216  0.173235
oldpeak 0.370926  0.326621  0.157216  1.348095  0.225493
cp      0.238673  0.209134  0.173235  0.225493  0.921841

Correlation matrix for the top 5 attributes:
           thal       ca    exang   oldpeak       cp
thal    1.000000  0.247557  0.321680  0.333925  0.259835
ca      0.247557  1.000000  0.145788  0.301067  0.233117
exang   0.321680  0.145788  1.000000  0.288223  0.384060
oldpeak 0.333925  0.301067  0.288223  1.000000  0.202277
cp      0.259835  0.233117  0.384060  0.202277  1.000000

Top 3 most important attributes:
 thal    0.515894
ca      0.460033
exang   0.431894
Name: target, dtype: float64
(base) student@cseadmin:~/Desktop/sinan$
```