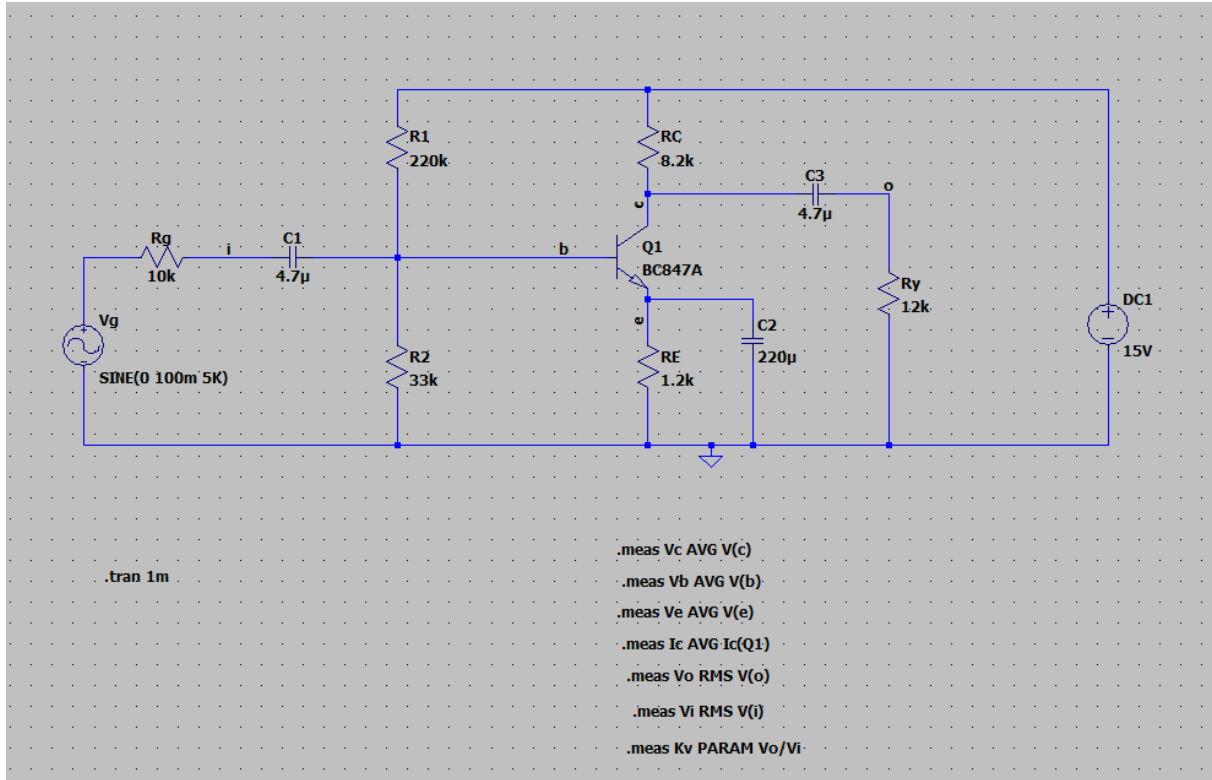


## EHB-311 EXPERIMENT-3

1)

WITH CAPACITOR



Error Log:

```

Circuit: * C:\Users\BASAR-PC\Desktop\Draft2.asc

Direct Newton iteration for .op point succeeded.

vc: AVG(v(c))=6.6784 FROM 0 TO 0.001
vb: AVG(v(b))=1.80195 FROM 0 TO 0.001
ve: AVG(v(e))=1.15689 FROM 0 TO 0.001
ic: AVG(ic(q1))=0.00105268 FROM 0 TO 0.001
vo: RMS(v(o))=3.43877 FROM 0 TO 0.001
vi: RMS(v(i))=0.0235752 FROM 0 TO 0.001
kv: vo/vi=145.864

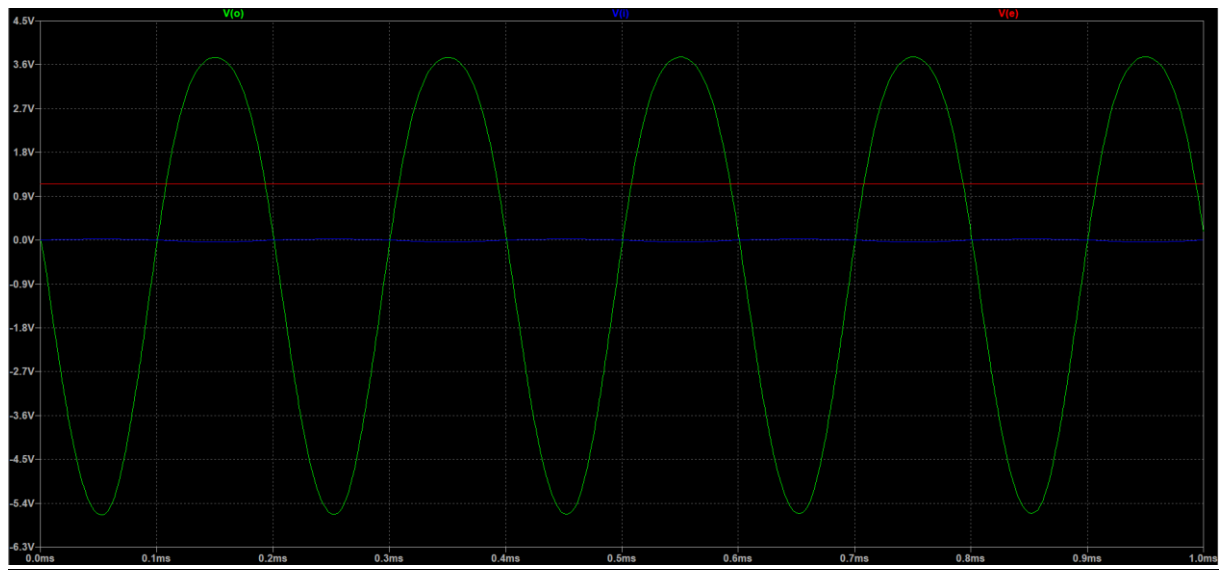
Date: Wed Dec 02 14:27:49 2020
Total elapsed time: 0.177 seconds.

tnom = 27
temp = 27
method = modified trap
totiter = 2115
traniter = 2107
tranpoints = 1042
accept = 1042
rejected = 0
matrix size = 12
fillins = 0
solver = Normal
Matrix Compiler1: 624 bytes object code size 0.1/0.1/[0.1]
Matrix Compiler2: 920 bytes object code size 0.1/0.1/[0.1]

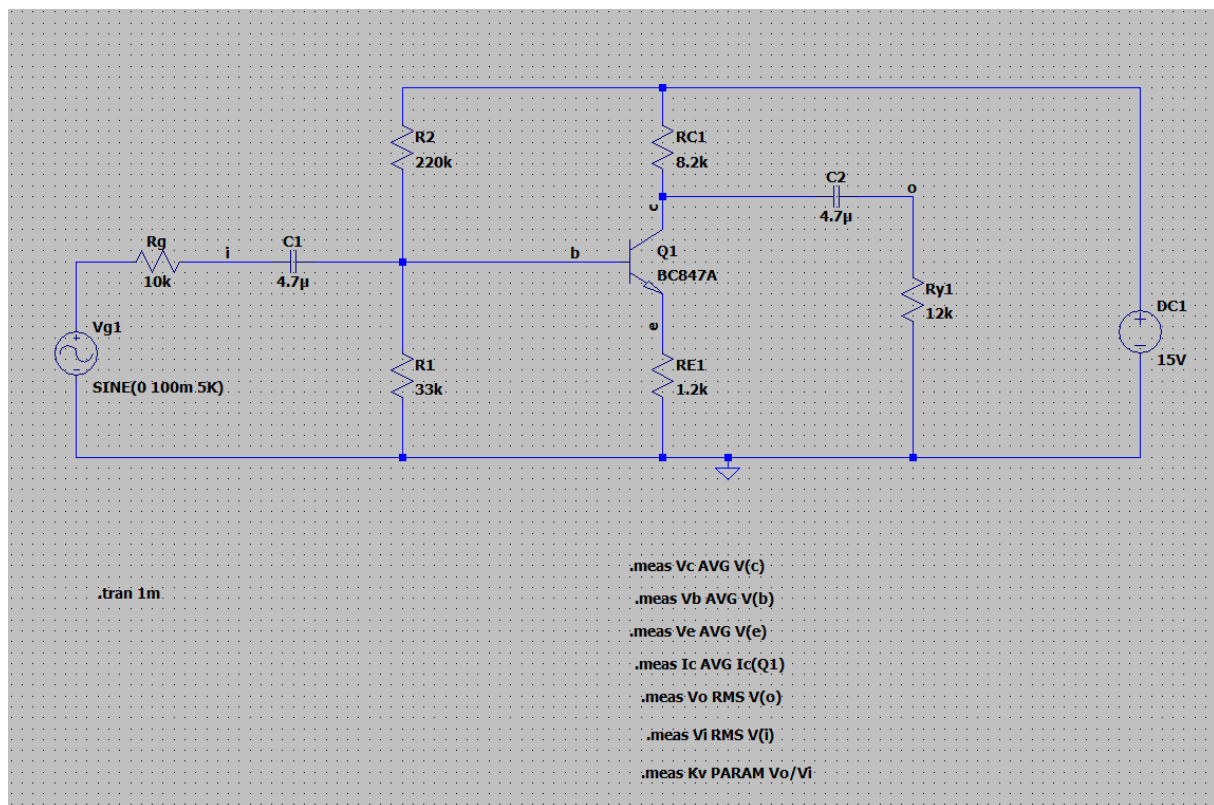
```

Voltage gain = 145.864

Plot the output voltage ( $V_O$ -t), input voltage ( $V_g$ -t) and ( $V_e$ -t):



## WITHOUT CAPACITOR



## Error Log:

```

Circuit: * C:\Users\BASAR-PC\Desktop\Draft3.asc

Direct Newton iteration for .op point succeeded.

vc: AVG(v(c))=7.13976 FROM 0 TO 0.001
vb: AVG(v(b))=1.80682 FROM 0 TO 0.001
ve: AVG(v(e))=1.15653 FROM 0 TO 0.001
ic: AVG(ic(q1))=0.000958559 FROM 0 TO 0.001
vo: RMS(v(o))=0.199812 FROM 0 TO 0.001
vi: RMS(v(i))=0.050688 FROM 0 TO 0.001
kv: vo/vi=3.94199

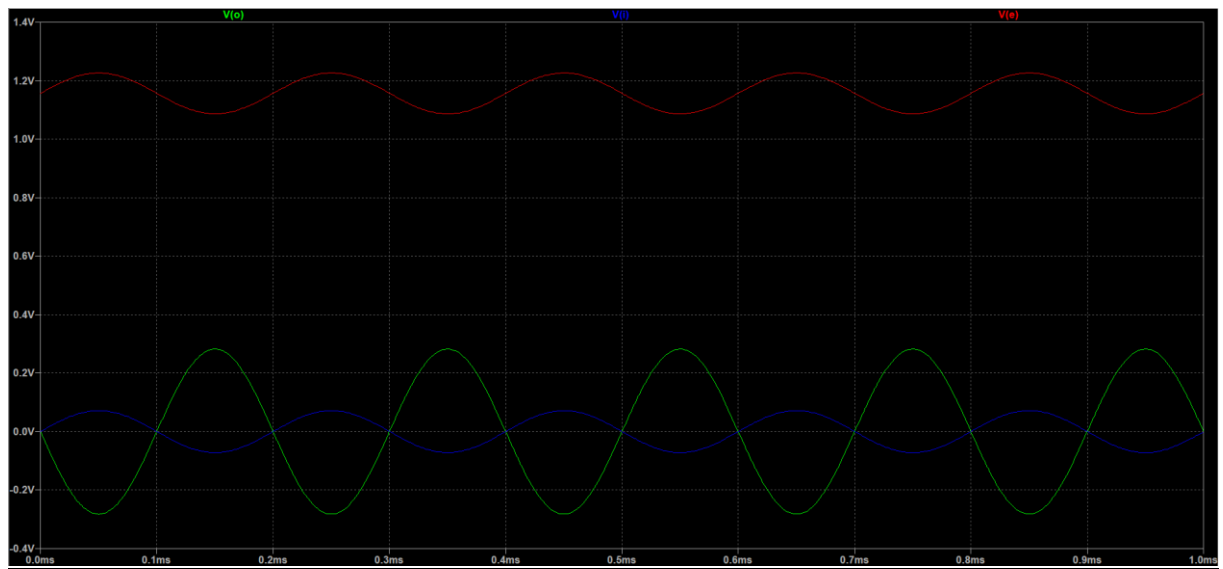
Date: Wed Dec 02 14:39:01 2020
Total elapsed time: 0.158 seconds.

tnom = 27
temp = 27
method = modified trap
totiter = 2097
traniter = 2089
tranpoints = 1042
accept = 1042
rejected = 0
matrix size = 12
fillins = 0
solver = Normal
Matrix Compiler1: 624 bytes object code size 0.9/0.1/[0.1]
Matrix Compiler2: 920 bytes object code size 0.1/0.1/[0.1]

```

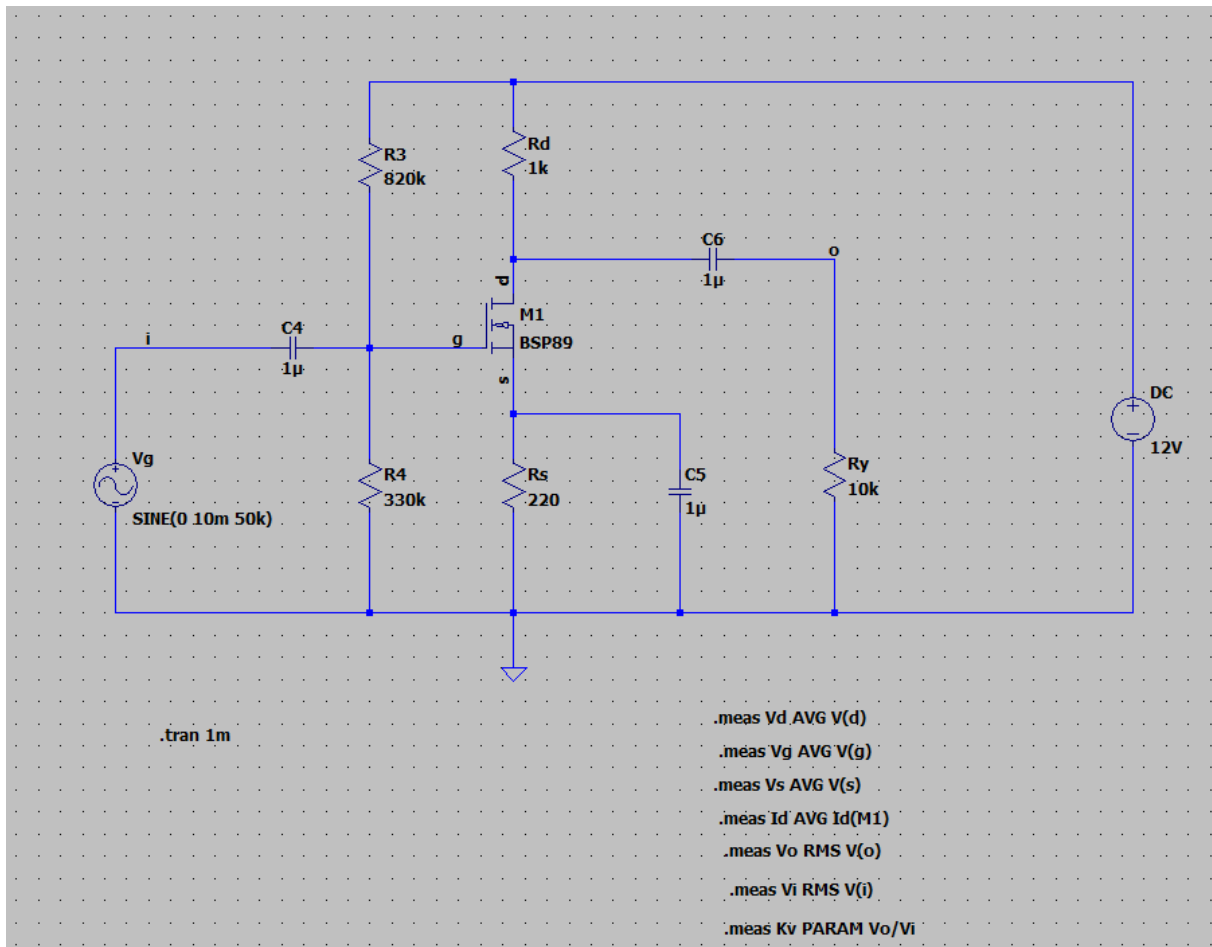
Voltage gain = 3.94199

Plot the output voltage ( $V_O$ -t), input voltage ( $V_g$ -t) and ( $V_e$ -t):



2)

## WITH CAPACITOR



## Error Log:

```
Circuit: * C:\Users\BASAR-PC\Desktop\Draft4.asc

Direct Newton iteration for .op point succeeded.

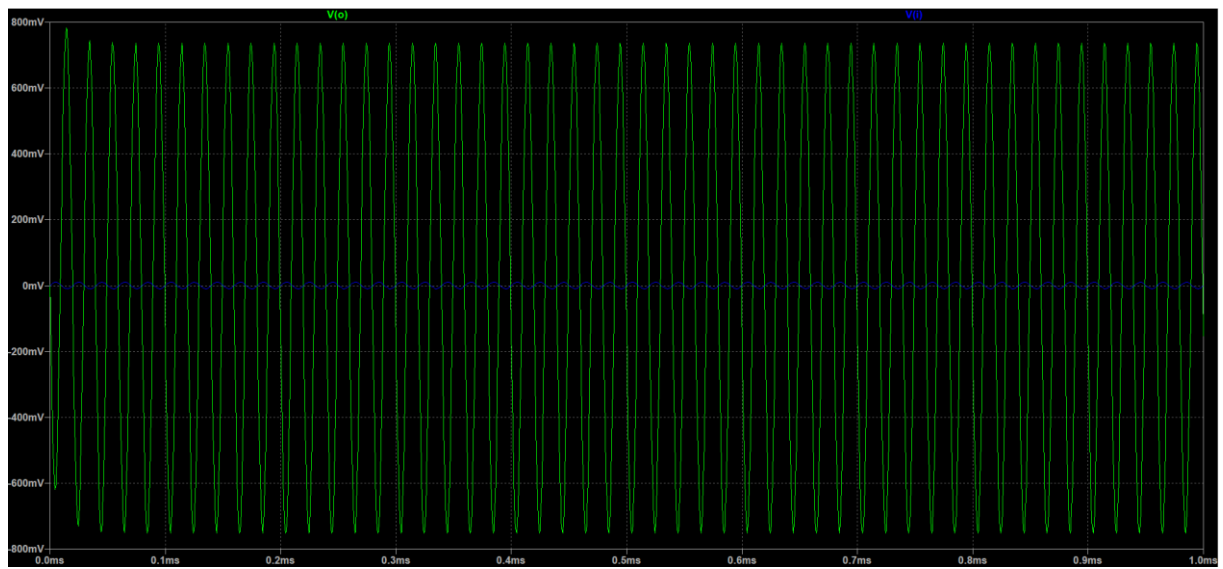
vd: AVG(v(d))=4.15299 FROM 0 TO 0.001
vg: AVG(v(g))=3.44348 FROM 0 TO 0.001
vs: AVG(v(s))=1.72657 FROM 0 TO 0.001
id: AVG(id(m1))=0.00784696 FROM 0 TO 0.001
vo: RMS(v(o))=0.51992 FROM 0 TO 0.001
vi: RMS(v(i))=0.00704136 FROM 0 TO 0.001
kv: vo/vi=73.838

Date: Wed Dec 02 14:41:07 2020
Total elapsed time: 0.189 seconds.

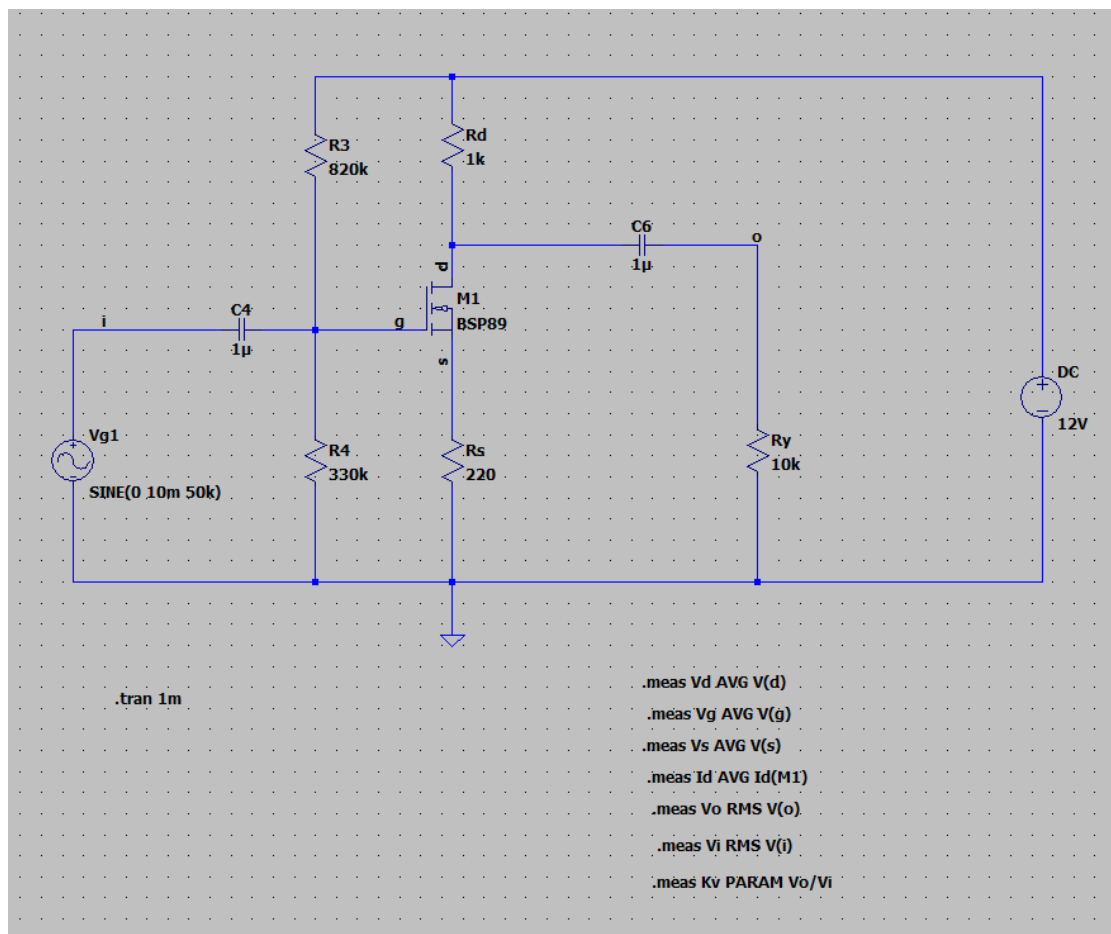
tnom = 27
temp = 27
method = modified trap
totiter = 5980
traniter = 5969
tranpoints = 1771
accept = 1418
rejected = 353
matrix size = 12
fillins = 5
solver = Normal
Matrix Compiler1: 838 bytes object code size 0.1/0.1/[0.1]
Matrix Compiler2: 996 bytes object code size 0.1/0.1/[0.1]
```

Voltage gain = 73.838

Plot the output voltage ( $V_O$ -t), input voltage ( $V_g$ -t):



## WITHOUT CAPACITOR



## Error Log:

```

Circuit: * C:\Users\BASAR-PC\Desktop\Draft5.asc

Direct Newton iteration for .op point succeeded.

vd: AVG(v(d))=4.15258 FROM 0 TO 0.001
vg: AVG(v(g))=3.44348 FROM 0 TO 0.001
vs: AVG(v(s))=1.72643 FROM 0 TO 0.001
id: AVG(id(m1))=0.00784742 FROM 0 TO 0.001
vo: RMS(v(o))=0.0271964 FROM 0 TO 0.001
vi: RMS(v(i))=0.00703589 FROM 0 TO 0.001
kv: vo/vi=3.86538

Date: Wed Dec 02 14:43:16 2020
Total elapsed time: 0.193 seconds.

tnom = 27
temp = 27
method = modified trap
totiter = 5281
traniter = 5270
tranpoints = 1756
accept = 1363
rejected = 393
matrix size = 12
fillins = 5
solver = Normal
Matrix Compiler1: 838 bytes object code size 0.1/0.1/[0.1]
Matrix Compiler2: off 10 11/0 1/0 1

```

Voltage gain = 3.86538

-output voltage ( $V_o$ -t), input voltage ( $V_g$ -t)

