```
Initial Parameters...
R(load) = 500 ohms
r = 0.40
w = 0.10


---------
INITIAL Particle 1 ::   pos(duty)=   0.40000000    fitness(Output Power)=  10.64447425
INITIAL Particle 2 ::   pos(duty)=   0.60000000    fitness(Output Power)=  23.53304429
INITIAL Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


================================================
++++++++++++++Start of Iterations++++++++++++++
================================================
Iteration No: 1
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0320
    0.0160
         0

Particle 1 ::   pos(duty)=   0.43200000    fitness(Output Power)=  12.11999332
Particle 2 ::   pos(duty)=   0.61600000    fitness(Output Power)=  25.59744983
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000



--------
Iteration No: 2
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0326
    0.0163
         0

Particle 1 ::   pos(duty)=   0.46464000    fitness(Output Power)=  13.58447146
Particle 2 ::   pos(duty)=   0.63232000    fitness(Output Power)=  28.31386375
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000



--------
Iteration No: 3
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0301
    0.0150
         0
```

```
Particle 1 ::    pos(duty)=   0.49473280    fitness(Output Power)= 15.03798532
Particle 2 ::    pos(duty)=   0.64736640    fitness(Output Power)= 30.32439193
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)= 88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 4
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0274
    0.0137
         0

Particle 1 ::    pos(duty)=   0.52216346    fitness(Output Power)= 17.19786443
Particle 2 ::    pos(duty)=   0.66108173    fitness(Output Power)= 32.96983973
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)= 88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 5
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0250
    0.0125
         0

Particle 1 ::    pos(duty)=   0.54713345    fitness(Output Power)= 18.62429944
Particle 2 ::    pos(duty)=   0.67356672    fitness(Output Power)= 35.57550583
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)= 88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 6
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0227
    0.0114
         0

Particle 1 ::    pos(duty)=   0.56985977    fitness(Output Power)= 20.74391235
Particle 2 ::    pos(duty)=   0.68492988    fitness(Output Power)= 37.50398015
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)= 88.83299511
```

Updated best Fitness Position =   0.80000000

Iteration No: 7
c1 =   0.20000000   c2 =   0.20000000
velocity =

    0.0207
    0.0103
        0

Particle 1 ::   pos(duty)=   0.59054362   fitness(Output Power)= 22.83970002
Particle 2 ::   pos(duty)=   0.69527181   fitness(Output Power)= 40.04134853
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 8
c1 =   0.20000000   c2 =   0.20000000
velocity =

    0.0188
    0.0094
        0

Particle 1 ::   pos(duty)=   0.60936851   fitness(Output Power)= 24.91191014
Particle 2 ::   pos(duty)=   0.70468426   fitness(Output Power)= 42.54043113
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 9
c1 =   0.20000000   c2 =   0.20000000
velocity =

    0.0171
    0.0086
        0

Particle 1 ::   pos(duty)=   0.62650152   fitness(Output Power)= 26.96078784
Particle 2 ::   pos(duty)=   0.71325076   fitness(Output Power)= 45.00175791
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

```
--------
Iteration No: 10
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0156
    0.0078
         0

Particle 1 ::   pos(duty)=   0.64209470    fitness(Output Power)=   29.65674882
Particle 2 ::   pos(duty)=   0.72104735    fitness(Output Power)=   47.42585151
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 11
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0142
    0.0071
         0

Particle 1 ::   pos(duty)=   0.65628644    fitness(Output Power)=   31.65212326
Particle 2 ::   pos(duty)=   0.72814322    fitness(Output Power)=   50.40439394
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 12
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0129
    0.0065
         0

Particle 1 ::   pos(duty)=   0.66920270    fitness(Output Power)=   34.27761090
Particle 2 ::   pos(duty)=   0.73460135    fitness(Output Power)=   52.74658666
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 13
c1 =   0.20000000    c2 =   0.20000000
velocity =
```

```
    0.0118
    0.0059
         0
```

Particle 1 ::   pos(duty)=   0.68095811   fitness(Output Power)= 36.86359309
Particle 2 ::   pos(duty)=   0.74047906   fitness(Output Power)= 54.47985225
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 14
c1 =   0.20000000   c2 =   0.20000000
velocity =

```
    0.0107
    0.0053
         0
```

Particle 1 ::   pos(duty)=   0.69165700   fitness(Output Power)= 39.41061659
Particle 2 ::   pos(duty)=   0.74582850   fitness(Output Power)= 56.76009695
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 15
c1 =   0.20000000   c2 =   0.20000000
velocity =

```
    0.0097
    0.0049
         0
```

Particle 1 ::   pos(duty)=   0.70139433   fitness(Output Power)= 41.91922067
Particle 2 ::   pos(duty)=   0.75069717   fitness(Output Power)= 59.00561554
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 16
c1 =   0.20000000   c2 =   0.20000000
velocity =

```
    0.0089
    0.0044
         0
```

```
Particle 1 ::   pos(duty)=   0.71025652    fitness(Output Power)=  44.38993712
Particle 2 ::   pos(duty)=   0.75512826    fitness(Output Power)=  61.21688887
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 17
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0081
    0.0040
         0

Particle 1 ::   pos(duty)=   0.71832222    fitness(Output Power)=  46.82329041
Particle 2 ::   pos(duty)=   0.75916111    fitness(Output Power)=  62.85315593
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 18
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0073
    0.0037
         0

Particle 1 ::   pos(duty)=   0.72566301    fitness(Output Power)=  49.21979779
Particle 2 ::   pos(duty)=   0.76283150    fitness(Output Power)=  65.00563718
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 19
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0067
    0.0033
         0

Particle 1 ::   pos(duty)=   0.73234405    fitness(Output Power)=  51.57996934
Particle 2 ::   pos(duty)=   0.76617202    fitness(Output Power)=  66.59834511
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511
```

Updated best Fitness Position =   0.80000000

Iteration No: 20
c1 =   0.20000000   c2 =   0.20000000
velocity =

     0.0061
     0.0030
          0

Particle 1 ::   pos(duty)=   0.73842463   fitness(Output Power)= 53.90430813
Particle 2 ::   pos(duty)=   0.76921231   fitness(Output Power)= 68.17270782
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 21
c1 =   0.20000000   c2 =   0.20000000
velocity =

     0.0055
     0.0028
          0

Particle 1 ::   pos(duty)=   0.74395872   fitness(Output Power)= 56.19331028
Particle 2 ::   pos(duty)=   0.77197936   fitness(Output Power)= 69.72891620
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 22
c1 =   0.20000000   c2 =   0.20000000
velocity =

     0.0050
     0.0025
          0

Particle 1 ::   pos(duty)=   0.74899543   fitness(Output Power)= 58.44746505
Particle 2 ::   pos(duty)=   0.77449771   fitness(Output Power)= 71.26715916
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

```
--------
Iteration No: 23
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0046
    0.0023
         0

Particle 1 ::   pos(duty)=   0.75357946    fitness(Output Power)=  60.66725498
Particle 2 ::   pos(duty)=   0.77678973    fitness(Output Power)=  72.78762365
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 24
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0042
    0.0021
         0

Particle 1 ::   pos(duty)=   0.75775151    fitness(Output Power)=  62.30983201
Particle 2 ::   pos(duty)=   0.77887576    fitness(Output Power)=  73.79148117
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 25
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0038
    0.0019
         0

Particle 1 ::   pos(duty)=   0.76154859    fitness(Output Power)=  64.47062454
Particle 2 ::   pos(duty)=   0.78077430    fitness(Output Power)=  75.28272508
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 26
c1 =   0.20000000    c2 =   0.20000000
```

```
velocity =

    0.0035
    0.0017
         0

Particle 1 ::    pos(duty)=   0.76500442    fitness(Output Power)=  66.06949031
Particle 2 ::    pos(duty)=   0.78250221    fitness(Output Power)=  76.26727134
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 27
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0031
    0.0016
         0

Particle 1 ::    pos(duty)=   0.76814964    fitness(Output Power)=  67.64994678
Particle 2 ::    pos(duty)=   0.78407482    fitness(Output Power)=  77.24418689
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 28
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0029
    0.0014
         0

Particle 1 ::    pos(duty)=   0.77101220    fitness(Output Power)=  69.21218551
Particle 2 ::    pos(duty)=   0.78550610    fitness(Output Power)=  78.21352477
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 29
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0026
    0.0013
```

```
          0

Particle 1 ::    pos(duty)=   0.77361747    fitness(Output Power)=   70.75639608
Particle 2 ::    pos(duty)=   0.78680874    fitness(Output Power)=   79.17533765
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 30
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0024
    0.0012
         0

Particle 1 ::    pos(duty)=   0.77598860    fitness(Output Power)=   72.28276608
Particle 2 ::    pos(duty)=   0.78799430    fitness(Output Power)=   80.12967783
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 31
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0022
    0.0011
         0

Particle 1 ::    pos(duty)=   0.77814663    fitness(Output Power)=   73.79148117
Particle 2 ::    pos(duty)=   0.78907331    fitness(Output Power)=   80.60406191
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 32
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0020
    0.0010
         0

Particle 1 ::    pos(duty)=   0.78011070    fitness(Output Power)=   74.78757375
Particle 2 ::    pos(duty)=   0.79005535    fitness(Output Power)=   81.54729033
```

Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 33
c1 =   0.20000000   c2 =   0.20000000
velocity =

    0.0018
    0.0009
         0

Particle 1 ::   pos(duty)=   0.78189825   fitness(Output Power)= 75.77595537
Particle 2 ::   pos(duty)=   0.79094913   fitness(Output Power)= 82.01614752
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 34
c1 =   0.20000000   c2 =   0.20000000
velocity =

    0.0016
    0.0008
         0

Particle 1 ::   pos(duty)=   0.78352515   fitness(Output Power)= 77.24418689
Particle 2 ::   pos(duty)=   0.79176257   fitness(Output Power)= 82.94837984
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

Iteration No: 35
c1 =   0.20000000   c2 =   0.20000000
velocity =

    0.0015
    0.0007
         0

Particle 1 ::   pos(duty)=   0.78500583   fitness(Output Power)= 78.21352477
Particle 2 ::   pos(duty)=   0.79250291   fitness(Output Power)= 83.41176768
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)= 88.83299511

Updated best Fitness Position =   0.80000000

```
--------
Iteration No: 36
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0013
    0.0007
         0

Particle 1 ::    pos(duty)=   0.78635343    fitness(Output Power)=  78.69536856
Particle 2 ::    pos(duty)=   0.79317671    fitness(Output Power)=  83.87334509
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 37
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0012
    0.0006
         0

Particle 1 ::    pos(duty)=   0.78757991    fitness(Output Power)=  79.65343857
Particle 2 ::    pos(duty)=   0.79378996    fitness(Output Power)=  84.33311836
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 38
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0011
    0.0006
         0

Particle 1 ::    pos(duty)=   0.78869617    fitness(Output Power)=  80.60406191
Particle 2 ::    pos(duty)=   0.79434808    fitness(Output Power)=  84.79109378
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 39
```

```
c1 =   0.20000000    c2 =   0.20000000
velocity =

    0.0010
    0.0005
         0

Particle 1 ::   pos(duty)=   0.78971210    fitness(Output Power)=  81.07659726
Particle 2 ::   pos(duty)=   0.79485605    fitness(Output Power)=  85.24727761
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 40
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.9246
    0.4623
         0

Particle 1 ::   pos(duty)=   0.79063673    fitness(Output Power)=  82.01614752
Particle 2 ::   pos(duty)=   0.79531836    fitness(Output Power)=  85.24727761
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 41
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.8415
    0.4208
         0

Particle 1 ::   pos(duty)=   0.79147825    fitness(Output Power)=  82.48317524
Particle 2 ::   pos(duty)=   0.79573913    fitness(Output Power)=  85.70167609
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 42
```

```
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.7659
    0.3829
         0

Particle 1 ::   pos(duty)=   0.79224414   fitness(Output Power)=  82.94837984
Particle 2 ::   pos(duty)=   0.79612207   fitness(Output Power)=  86.15429544
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 43
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.6971
    0.3485
         0

Particle 1 ::   pos(duty)=   0.79294120   fitness(Output Power)=  83.41176768
Particle 2 ::   pos(duty)=   0.79647060   fitness(Output Power)=  86.15429544
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 44
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.6344
    0.3172
         0

Particle 1 ::   pos(duty)=   0.79357561   fitness(Output Power)=  83.87334509
Particle 2 ::   pos(duty)=   0.79678781   fitness(Output Power)=  86.60514184
Particle 3 ::   pos(duty)=   0.80000000   fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000
```

```
--------
Iteration No: 45
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.5774
    0.2887
         0

Particle 1 ::    pos(duty)=   0.79415300    fitness(Output Power)=   84.33311836
Particle 2 ::    pos(duty)=   0.79707650    fitness(Output Power)=   86.60514184
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 46
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.5255
    0.2627
         0

Particle 1 ::    pos(duty)=   0.79467850    fitness(Output Power)=   84.79109378
Particle 2 ::    pos(duty)=   0.79733925    fitness(Output Power)=   87.05422148
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 47
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

    0.4783
    0.2391
         0

Particle 1 ::    pos(duty)=   0.79515677    fitness(Output Power)=   85.24727761
Particle 2 ::    pos(duty)=   0.79757839    fitness(Output Power)=   87.05422148
Particle 3 ::    pos(duty)=   0.80000000    fitness(Output Power)=   88.83299511


Updated best Fitness Position =   0.80000000
```

```
--------
Iteration No: 48
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

     0.4353
     0.2176
          0

Particle 1 ::   pos(duty)=   0.79559206    fitness(Output Power)=  85.70167609
Particle 2 ::   pos(duty)=   0.79779603    fitness(Output Power)=  87.50154051
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 49
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

     0.3962
     0.1981
          0

Particle 1 ::   pos(duty)=   0.79598822    fitness(Output Power)=  85.70167609
Particle 2 ::   pos(duty)=   0.79799411    fitness(Output Power)=  87.50154051
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511


Updated best Fitness Position =   0.80000000


--------
Iteration No: 50
c1 =   0.20000000    c2 =   0.20000000
velocity =

   1.0e-03 *

     0.3606
     0.1803
          0

Particle 1 ::   pos(duty)=   0.79634878    fitness(Output Power)=  86.15429544
Particle 2 ::   pos(duty)=   0.79817439    fitness(Output Power)=  87.50154051
Particle 3 ::   pos(duty)=   0.80000000    fitness(Output Power)=  88.83299511
```

Updated best Fitness Position =   0.80000000

>>