

Stage 1: the root node.

All Solutions

Incumbent

$$AAAA = 0.9 \times 0.8 \times 0.9 \times 0.85 = 0.5508$$

None

Stage 2: operation 1

All Solutions

$$AAAA = 0.5508$$

A

$$ACCC = 0.9 \times 0.7 \times 0.85 \times 0.8 = 0.4284$$

B

$$BAAA = 0.7 \times 0.8 \times 0.9 \times 0.85 = 0.4284$$

C

$$CAAA = 0.85 \times 0.8 \times 0.9 \times 0.85 = 0.5202$$

D

$$DAAA = 0.75 \times 0.8 \times 0.9 \times 0.85 = 0.459$$

Incumbent:

None

Stage 3: operation 2 (Global-Best Node Selection Policy) Node C

All Solutions

$$AAAA = 0.5508$$

A

$$ACCC = 0.4284$$

B

$$BAAA = 0.4284$$

C

$$CAAA = 0.5202$$

D

$$DAAA = 0.459$$

A

$$CABB = 0.85 \times 0.8 \times 0.8 \times 0.7 = 0.3808$$

B

$$CBAA = 0.85 \times 0.6 \times 0.9 \times 0.85 = 0.3902$$

D

$$CDAA = 0.85 \times 0.7 \times 0.9 \times 0.85 = 0.4552$$

Incumbent

$$CABD = 0.3808$$

Stage 4: Operation 2 (Global-Best Node Selection) — Node D

All Solutions

$$AAAA = 0.5508$$

Incumbent

$$CABD = 0.3808$$

A

$$ACCC = 0.4284$$

B

$$BAAA = 0.4284$$

C

$$CAAA = 0.5202$$

D

$$DAAA = 0.4390$$

A

$$CABD = 0.3808$$

B

$$CBAA = 0.3902$$

D

$$CDAA = 0.4552$$

A

$$DACC = 0.75 \times 0.8 \times 0.85 \times 0.8 = 0.408$$

B

$$DBAA = 0.75 \times 0.6 \times 0.9 \times 0.85 = 0.3443$$

C

$$DCAA = 0.75 \times 0.7 \times 0.9 \times 0.85 = 0.4016$$

Stage 5: Operation 3 (Global-Best Node Selection) - CD Node

all solutions

AAAA = 0.5508

A

ACCC = 0.4284

B

BAAA = 0.4284

A

CABD = 0.3808

C

CAAA = 0.5202

B

CBAA = 0.3902

A

CDAB = 0.85 x 0.7 x 0.9 x 0.7
= 0.3749

D

DAAA = 0.459

A

~~CDAA = 0.4552~~

B

~~CDBA~~ = 0.85 x 0.7 x 0.8 x 0.85
= 0.4046

Incumbent

CDBA = 0.4046

A

DACC = 0.4080

B

DBAA = 0.3443

C

DCAA = 0.4016