Unit 11 - Week 9

Assignment 9

The due date for submitting this assignment has passed. Due on 2019-04-03, 23:59 IST.
As per our records you have not submitted this assignment.

1) A 2-area power system has the following details:

Area 1: 2 GENCOs (Generating company) with total 5 units
  3 DISCOs (Distribution company)
Area 2: 1 GENCO with 3 units
  2 DISCOs

The dimension of the DISCO participation matrix is:

a. 3x5
b. 5x3
c. 5x8
d. 8x5

No, the answer is incorrect.
Score: 0
Accepted Answers:
d

2) The dimension of the DISCO participation matrix for a two area power system is 5 X 4.

There are 2 generators in area 1 and 2 DISCOs in area 2. Find out the number of generators in area 2.

a. 5
b. 3
c. 2
d. 1

No
3) The dimension of the DISCO participation matrix for a two area power system is $5 \times 4$.

There are 2 generators in area 1 and 2 DISCOs in area 2. Find out the number of DISCOs in area 1.

- a. 5
- b. 3
- c. 2
- d. 1

Accepted Answers: 
- a
- b
- c
- d

No, the answer is incorrect.
Score: 0

4) A two area power system has total 4 GENCOs and 4 DISCOs. DISCO$_2$ demands 0.2 p.u. MW power out of which 0.04 p.u. MW is demanded from GENCO$_1$, 0.07 p.u. MW is demanded from GENCO$_2$, 0.05 p.u. MW is demanded from GENCO$_3$ and the rest is demanded from GENCO$_4$. Find $c_{pl2}$. (The symbol carries its usual meaning)

- a. 0.35
- b. 0.25
- c. 0.2
- d. 0.15

Accepted Answers: 
- a
- b
- c
- d

No, the answer is incorrect.
Score: 0

5) A two area power system has total 4 GENCOs and 4 DISCOs. DISCO$_2$ demands 0.2 p.u. MW power out of which 0.04 p.u. MW is demanded from GENCO$_1$, 0.07 p.u. MW is demanded from GENCO$_2$, 0.05 p.u. MW is demanded from GENCO$_3$ and the rest is demanded from GENCO$_4$. Find $c_{pl2}$. (The symbol carries its usual meaning)

- a. 0.35
- b. 0.25
- c. 0.2
- d. 0.15

Accepted Answers: 
- a
- b
- c
- d
6) A two area power system has total 4 GENCOs and 4 DISCOs. DISCO2 demands 0.2 p.u M power out of which 0.04 p.u MW is demanded from GENCO1, 0.07 p.u MW is demanded from GENCO3, 0.05 p.u MW is demanded from GENCO4 and the rest is demanded from GENCO2. (The symbol carries its usual meaning)

- a. 0.35
- b. 0.25
- c. 0.2
- d. 0.15

No, the answer is incorrect.
Score: 0
Accepted Answers:
a

7) A two area power system has total 4 GENCOs and 4 DISCOs. DISCO2 demands 0.2 p.u M power out of which 0.04 p.u MW is demanded from GENCO1, 0.07 p.u MW is demanded from GENCO3, 0.05 p.u MW is demanded from GENCO4 and the rest is demanded from GENCO2. Find the p.u MW power demanded from GENCO4 by DISCO2.

- a. 0.03
- b. 0.05
- c. 0.20
- d. 0.04

No, the answer is incorrect.
Score: 0
Accepted Answers:
b

8) A two area power system has total 4 GENCOs and 4 DISCOs. DISCO2 demands 0.2 p.u M power out of which 0.04 p.u MW is demanded from GENCO1, 0.07 p.u MW is demanded from GENCO3, 0.05 p.u MW is demanded from GENCO4 and the rest is demanded from GENCO2. (The symbol carries its usual meaning)

- a. 0.35
- b. 0.25
- c. 0.20
- d. 0.15

No, the answer is incorrect.
Score: 0
Accepted Answers:
c
A two area power system has the following details:

![Diagram of two area power system](image)

The DISCO participation matrix is given as follows:

\[ DPM = \begin{bmatrix}
0.5 & 0.25 & 0.0 & 0.30 \\
0.1 & 0.25 & 0.0 & 0.0 \\
0.1 & 0.25 & 0.50 & 0.35 \\
0.3 & 0.25 & 0.50 & 0.35
\end{bmatrix} \]

DISCO-1 demands 0.04 p.u MW power, DISCO-2 demands 0.03 p.u MW power, DISCO demands 0.04 p.u MW power, DISCO-4 demands 0.05 p.u MW power from GENCOs as defined by the DPM matrix and each GENCO participate in AGC as defined by following apfs:

\[ a'_{11} = 0.25, \quad a'_{12} = 0.75, \quad a'_{21} = a'_{22} = 0.5. \]

There are no uncontracted loads in the system. Find the scheduled power flow (in p.u MW) the tie line from area 1 to area 2 (at steady-state).

a. -0.016  
b. -0.018  
c. -0.014  
d. -0.020

No, the answer is incorrect.
Score: 0
Accepted Answers:
a
A two area power system has the following details:

\[
\begin{align*}
\text{Area-1} & \quad \text{GENCO-1} & \quad \text{GENCO-2} \\
\text{DISCO-1} & \quad \text{DISCO-2} \\
\text{Area-2} & \quad \text{GENCO-3} & \quad \text{GENCO-4} \\
& \quad \text{DISCO-3} & \quad \text{DISCO-4} \\
\end{align*}
\]

The DISCO participation matrix is given as follows

\[
DPM = \begin{bmatrix}
0.5 & 0.25 & 0.0 & 0.30 \\
0.1 & 0.25 & 0.0 & 0.0 \\
0.1 & 0.25 & 0.50 & 0.35 \\
0.3 & 0.25 & 0.50 & 0.35
\end{bmatrix}
\]

DISCO-1 demands 0.04 p.u MW power, DISCO-2 demands 0.03 p.u MW power, DISC demands 0.04 p.u MW power, DISCO-4 demands 0.05 p.u MW power from GENCOs as defined by the DPM matrix and each GENCO participate in AGC as defined by following aifs:

\[a'_{11} = 0.25, \ a'_{12} = 0.75, \ a'_{21} = a'_{22} = 0.5.\]

There are no uncontracted loads in the system. Find the steady-state power (in p.u MW) supplied by GENCO-1.

a. 0.0050  
b. 0.0250  
c. 0.0625  
d. 0.0425

No, the answer is incorrect.  
Score: 0  
Accepted Answers: d