

## Unit 8 - Week 7

### Course outline

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Week 7

Simulation and Case Study of AC Microgrid

Simulation and Case Study of DC Microgrid

Simulation and Case Study of AC-DC Hybrid Microgrid

Demand Side Management in the Smart Grid

Demand Response Analysis of Smart Grid

Quiz : Assignment 7

Solutions for Assignment - 7

Week 8

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## Assignment 7

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2019-09-18, 23:59 IST.**

1) Which of the following is true in the case of overexcited synchronous generator? **1 point**

- Absorbs reactive power
- Injects reactive power
- Operates at the unity power factor
- None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Injects reactive power*

2) Which of the following statement is true in the grid connected operation of the AC microgrid? **1 point**

- Battery charging, PV at MPPT, diesel generator regulating the voltage and frequency
- Battery charging, PV at off MPPT, diesel generator regulating the voltage and frequency
- Battery charging, PV at MPPT, diesel generator turned off
- None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Battery charging, PV at MPPT, diesel generator turned off*

3) While the dual active bridge converters are used to interface the two Autonomous DC microgrids, the transformer operates at? **1 point**

- Very low frequency
- Low frequency
- Medium frequency
- High frequency

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*High frequency*

4) In the islanded operation of the DC microgrid, suppose the battery reaches it's lowest SOC limit which of the following action is more preferable? **1 point**

- Battery is allowed to drain out
- PV is operated at off MPPT
- Additional loads are switched on
- Non-Emergency loads are turned off

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Non-Emergency loads are turned off*

5) During the steady state operation of the grid in the case of studied AC-DC hybrid system, the reactive power supplied by the fast-acting converters (q), which take part in the contingency situation are **1 point**

- Less than 40% of their available rating
- More than 40% of their available rating
- Equal to 40% of their available rating
- None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Less than 40% of their available rating*

6) The typical bus voltage ( $V_m$ ) range of the grid during steady/dynamic state is? **1 point**

- $0.9pu \leq V_m \leq 1.1pu$
- $V_m < 0.9pu$
- $V_m > 1.1pu$
- None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 *$0.9pu \leq V_m \leq 1.1pu$*

7) Which of the following statement regarding demand side management is true? **1 point**

- The number of devices shifted can be a negative value
- The number of devices shifted away from a time step can be more than the number of devices available for control at that time step.
- Connection times of devices can only be delayed, and not brought forward
- The devices can be delayed more than a predefined maximum limit

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Connection times of devices can only be delayed, and not brought forward*

8) Which of the following DSM strategies helps in reducing peak demand with the industrial customers? **1 point**

- utility driven
- Consumer driven
- multi Objective
- All of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*All of the above*

9) Which of the following is not the objective of demand response? **1 point**

- Maximization of Electricity Cost
- Maximization of Social Welfare
- Minimization of Aggregator's Power Consumption
- Minimization of both Electricity Cost and Aggregator's Power Consumption

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*Maximization of Electricity Cost*

10) Energy related DR belong to which of the following groups of DR programs? **1 point**

- DR based on control strategy
- DR based on price
- DR based on load
- None of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
*DR based on load*