

Unit 8 - Week 7

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Protection of Busbars

Protection against Transients and Surges along with System Response to Severe Upsets-I

Protection against Transients and Surges along with System Response to Severe Upsets-II

Arc Interruption Theory in Circuit Breaker-I

Arc Interruption Theory in Circuit Breaker-II

Quiz : Assignment 7

Solution Assignment 7

Week 8

Download Videos

Feedback Link

Assignment 7

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

Due on 2020-11-04, 23:59 IST.

1) The advantage of double bus arrangement over single bus arrangement is

2 points

- Low cost
 Better reliability and flexibility
 That of complete shutdown when fault occurs on one bus
 That it requires a simple protection scheme

No, the answer is incorrect.
Score: 0

Accepted Answers:
Better reliability and flexibility

2) Main and transfer bus bar arrangement is used when

1 point

- small interruptions to the load is permitted
 large interruptions to the load is permitted
 uninterrupted power supply is required to the load
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
uninterrupted power supply is required to the load

3) The cause of surge voltage in power system is

1 point

- Lightning
 Switching operations
 Resonance
 Any of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Any of the above

4) In an isolated neutral system, when a single line to ground fault occurs

1 point

- persistent arcing grounds will be developed
 voltage in the healthy phases rise to full line value causing isolation breakdown
 the capacitive current in the faulty phase rises to 3 times its normal value
 all of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
all of the above

5) Reduction in frequency is slower for a given overload for

1 point

- a small value of inertia constant
 a moderate value of inertia constant
 both (a) and (b)
 for a large value of inertia constant

No, the answer is incorrect.
Score: 0

Accepted Answers:
for a large value of inertia constant

6) Which technique is capable of detecting islanding in case of a perfect match between the generation and load demand in an islanded system?

2 points

- Active detection technique
 Passive detection technique
 Hybrid detection technique
 All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Active detection technique

7) A 220 kV, three-phase, 50 Hz, 60 km long overhead transmission line has a capacitance of 1.2 mF/km. Determine the inductive reactance and kVA rating of the arc suppression coil suitable for this system to eliminate arcing ground effect.

2 points

- 759.32 Ω and 17.19 MVA
 882.78 Ω and 18.28 MVA
 667.53 Ω and 16.24 MVA
 None of these

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of these

8) The first pole to clear factor in case of a phase-to-ground fault in an open neutral system and solidly grounded system are equal to

2 points

- 1.5 and 1, respectively
 1 and 1.5, respectively
 3 and 1, respectively
 1.5 and 3, respectively

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.5 and 1, respectively

9) The contact resistance of circuit breaker in closed position is of the order of

1 point

- 20 $\mu\Omega \pm 10$
 20 m $\Omega \pm 10$
 20 $\Omega \pm 10$
 200 $\Omega \pm 10$

No, the answer is incorrect.
Score: 0

Accepted Answers:
20 $\mu\Omega \pm 10$

10) A 50 Hz, 13.8 kV, three-phase generator with grounded neutral has an inductance of 15 mH/phase and is connected to a busbar through a circuit breaker (CB). The capacitance to earth between the generator and the CB is 0.05 μF /phase. The average RRRV is

2 points

- 250.22 $\times 10^3$ kV/s
 262.09 kV/s
 262.09 $\times 10^3$ kV/s
 226.09 $\times 10^3$ kV/s

No, the answer is incorrect.
Score: 0

Accepted Answers:
262.09 $\times 10^3$ kV/s