

Unit 8 - Week 5

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Week 5 Assignment 5

The due date for submitting this assignment has passed. **Due on 2019-09-04, 23:59 IST.**
As per our records you have not submitted this assignment.

Common data for Question 1 to 9
A 3-phase step down transformer is connected to 6600-V mains and takes 10 A. The ratio of turns per phase is $\frac{N_1}{N_2} = 12$. Neglect losses.

1) Calculate the secondary line voltage (in V) if the connection is delta/delta.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 545,555 1 point

2) Calculate the secondary line current (in A) if the connection is delta/delta.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 118,122 1 point

3) Calculate the secondary line voltage (in V) if the connection is star/star.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 545,555 1 point

4) Calculate the secondary line current (in A) if the connection is star/star.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 118,122 1 point

5) Calculate the secondary line voltage (in V) if the connection is delta/star.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 543,953 1 point

6) Calculate the secondary line current (in A) if the connection is delta/star.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 67.4,71.4 1 point

7) Calculate the secondary line voltage (in V) if the connection is star/delta.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 314,322 1 point

8) Calculate the secondary line current (in A) if the connection is star/delta.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 204,212 1 point

9) Calculate the output KVA.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 110.3,118.3 1 point

Common data for Question 10 to 11
A 50-hp, 440-V, 3-phase induction motor with an efficiency of 0.9 and a power factor of 0.85 on full load is supplied from a 6600-V/440-V, delta/star connected transformer. Ignore the magnetizing current.

10) Calculate the current (in A) in the high-voltage transformer phases.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 2.16,2.76 1 point

11) Calculate the current (in A) in the low-voltage transformer phases.

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 61,67 1 point

Common data for Question 12 to 14
Three 1-phase transformers connected in delta supply 100-A per line to a 3-phase, 3-wire system.

12) What is the current (in A) in each transformer?

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 54.8,60.8 1 point

13) If one unit develops a fault and is removed, then by how much is the capacity of the set reduced (in percent)

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 40.2,44.2 1 point

14) Find the current (in A) in each of the remaining transformers if the line current corresponds to the capacity of the remaining set (as calculated in the question 13).

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 54.8,60.8 1 point

Common data for Question 15 to 16
The ratio of the numbers of turns per phase in the primary secondary and tertiary windings of a single phase transformer is 10 : 2 : 1. Secondary current is 45-A at power factor 0.8 lagging and tertiary current is 50-A at power factor 0.71 lagging.

15) Find the primary current (in A)

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 12,16 1 point

16) Find the primary power factor

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 0.74,0.80 1 point

17) A star/star/delta transformer with primary, secondary and tertiary voltages of 11000-V, 1000-V and 400-V has a magnetizing current of 3-A. There is a balanced load of 600-kVA at 0.8 power factor lagging on the secondary winding and a balanced load of 150-kW on the tertiary winding. Primary power factor is 0.82 lagging. Neglect losses. Find the primary phase current (in A)

No, the answer is incorrect.
Score: 0
Accepted Answers: (Type: Range) 38.3,42.3 1 point