Unit 6 - Week 5

Assignment 5

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

Due on 2019-09-04, 23:59 IST.

For Question 1

Two single phase 11000/440V transformers having kVA ratings of 200 and 100 kVA respectively are operated in parallel. The equivalent resistance and reactance of the 200 kVA transformer when referred to the 11 kV side are 1 and 5 Ω respectively. The equivalent reactance of the 100 kVA transformer refereed to the 11 kV side is 9Ω.

1) What should be the equivalent resistance of the 100kVA transformer, if each transformer has to share a commonly connected load in proportion to its kVA rating?

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 4,5.3

1 point

For Question 2 and 3

Two single phase transformers A and B with equal turns operate in parallel and share a total load of 100kW at 0.8 pf lag. The impedance of transformer A is, Z_A= 0.5 + j 3 Ω and impedance of transformer B is , Z_B=0.6 +j1 Ω with respect to the secondary.

2) Calculate the load shared by transformer A in kW.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 18,23

1 point

3) Calculate the load shared by transformer B in kW.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 75,80

1 point

For Question 4 and 5

Two transformers A and B are joined in parallel to feed the same load. Given: open circuit voltages are 6600 V for transformer A and 6400 V for transformer B. Equivalent leakage impedance in terms of secondary = 0.3 + j3 Ω for transformer A and 0.2 + j1 Ω for transformer B. The load impedance is 8+j6 Ω

4) Determine the current (magnitude only) delivered by transformer A.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 190,200

1 point

5) Determine the current (magnitude only) delivered by transformer B.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 415,425

1 point

For Question 6 and 7

A three-phase transformer has 500 primary turns and 50 secondary turns. If the supply voltage is 2.4 kV,

6) Find the secondary line voltage (in Volts) on no-load when the windings are connected in star-delta configuration.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 135,140

1 point

7) Find the secondary line voltage (in Volts) on no-load when the windings are connected in delta-star configuration.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 413,416

1 point

For Questions 8 to 11

Three single phase transformers are connected in delta-delta to supply a 3-phase balanced load at 1500kW at 4400 V (0.8 pf lag). The transformers are supplied by 3 phase mains at 11 kV.

8) Find the phase current of the secondary of the transformer.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 135,145

1 point

9) Find the line current of the secondary of the transformer.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 234,251

1 point

10) Find the phase current of the primary of the transformer.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 54,58

1 point

11) Find the line current of the primary of the transformer.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 93,100

1 point

For Question 12 and 13

A 3-phase transformer rated at 1000 kVA, 11/3.3 kV has its primary windings star connected and its secondary windings delta connected. The actual resistance per phase of these windings are: R_1= 0.375 Ω, R_2=0.095 Ω, x_1= 9.5 Ω, x_2=2 Ω per phase.

12) Calculate the rated primary current.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 50,55

1 point

13) Calculate the line voltage at normal frequency which must be applied to primary terminals in order to obtain full load current in the windings when the secondary terminals are short circuited.

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 1530,1540

1 point