



**Faculty of Electrical & Electronics Engineering  
DEE3143 Basic Electrical Machine & Power System**

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**Name:** \_\_\_\_\_

**ID:** \_\_\_\_\_

**Section:** \_\_\_\_\_

**Date:** \_\_\_\_\_

(Failed to complete all the particulars above will be penalized 2 marks)

**QUIZ 1**

**Question**

A single phase 10kVA, 480/120V transformer has been tested to determine its equivalent circuit. The results of test are shown below:

Open-circuit test

$$V_{oc} = 480V$$

$$I_{oc} = 0.41A$$

$$P_{oc} = 38W$$

Short-circuit test

$$V_{sc} = 10V$$

$$I_{sc} = 10.6A$$

$$P_{sc} = 26W$$

All data given were taken from the primary side of the transformer. Find:

- (i) The equivalent circuit referred to the high-voltage side.
- (ii) Equivalent circuit referred to the low-voltage side.
- (iii) Voltage regulation for full load at 0.8 power factor lagging.
- (iv) The efficiency of the transformer under the condition in part (iii).