



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

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

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

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

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

**QUIZ 4**

A low voltage specific agriculture consumer having the following data from its monthly bill:

Maximum demand (kW) : 500 units  
Monthly active energy consumption (kWh) : 250,000 units  
Monthly reactive energy consumption (kVarh) : 187500 units

Using **Tariff H-Low Voltage Specific Agriculture Tariff (TNB)**, analyze

- (i) The monthly load factor of the consumer.
- (ii) The power factor of the consumer (assume 30 days per month).
- (iii) The total penalty charge due to poor power factor (if any) and the total monthly bill charge for this consumer.
- (iv) The size of capacitor, in Kvar, would raise the PF to be 0.85.

**[10 marks]**

***Tariff H - Low Voltage Specific Agriculture Tariff and power factor surcharge***

***For overall monthly consumption between 0-200 kWh per month:***

*For all kWh sen/kWh 36.9*

*The minimum monthly charge is RM7.20*

***For overall monthly consumption more than 200 kWh per month:***

*For all kWh (from 1kWh and above) sen/kWh 40.3*

*The minimum monthly charge is RM7.20*

***TNB Power factor surcharge***

<i>Percent of surcharge from the current bill</i>	<i>Condition</i>
<i>1.5%</i>	<i>For every 0.01 less than 0.85 power factor</i>
<i>3.0%</i>	<i>For every 0.01 less than 0.75 power factor</i>