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Khwaja Yunus Ali University

Calculation of Electricity bill of your own household

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**Electrical Circuit Assignment**

**Topic:** Calculation of electricity bill of my own house.

Step 1: Find the number of various equipment that is available in my house,

1. Light: 3
2. Refrigerator: 1
3. Water pump: 1
4. Rice cooker: 1

Step 2: Find the power rating of each equipment,

1. Light: 20 watts(each)
2. Refrigerator: 130 watts
3. Water pump: 750 watts
4. Rice cooker: 700 watts

Step 3: Estimate the amount of time each piece of equipment is used

1. Light: 6 hours/day
2. Refrigerator: 5 hours/day
3. Water pump: 0.3 hours/day
4. Rice cooker: 1.2 hours/day

Step 4: Calculate total energy consumed by equipments (in Unit),

For Lights,

For Refrigerator,

For Water pump,

For Rice cooker,

If we calculate the unit consumed in one month, we’ll get approximately 62 unit per month is being used by all equipment.

Step 5: Find the energy rate using energy consumption range.

From 1 unit to 75 unit is 5.26 taka/unit

Step 6: Find the total cost of unit consumption,

For 62 unit = 62\*5.26 = 327 taka

So, the total cost of unit consumption is 327 taka.

Step 7: Find other costs beside unit consumption cost,

Demand Charge: 84 taka

Meter fee: 10 taka

Total vat (6%): 20+20 = 40 taka

Step 8: Add all costs and electricity bill,

Total = 327+84+10+40 = 461 taka

Step 9: Now if we compare calculated bill with the actual bill paper, we can see that the bill of my house is 430 takas.

So, the difference = (461 – 430) = 31 taka.

Step 10: Reasons for variation,

1. Rate Changes**:** Electricity rates can vary over time, and the bill might reflect different rates for different periods.
2. Estimation**:** Sometimes, utility companies use estimated readings rather than actual meter readings, which can lead to discrepancies.
3. Meter Accuracy**:** If the meter is faulty or inaccurate, it could result in an incorrect reading of the electricity consumption.
4. Peak and Off-Peak Rates**:** Some utility companies charge different rates for electricity usage during peak and off-peak hours which can cause variations.
5. Unaccounted Usage**:** There might be some devices or appliances that are not included in the calculations, leading to an underestimation of the total usage.