

<b>Course Name:</b>	<b>Elements of Electrical and Electronics Engineering</b>	<b>Semester:</b>	<b>I</b>
<b>Date of Submission:</b>	<b>15/ 01/ 2022</b>	<b>Batch No:</b>	
<b>Faculty Name:</b>		<b>Roll No:</b>	
<b>Faculty Sign &amp; Date:</b>		<b>Grade/Marks:</b>	<b>/ 20</b>

### **Internal Assessment: 1**

## **Brief Report on**

1. Electrical power Generation and distribution systems:

List the Electrical power generation methods in India. Explain using block diagram how electricity reaches at your home from generating station. Explain in brief the stages of conversion of Voltages and role of transformer.

2. List the possible electrical Hazards inside a home??

3. Electrical safety essentials: List and brief about Products for a safer home such as Circuit bakers, MCBs, Switch Fuse Unit (SFU, ELCB, MCCB. (Note: Students can add photographs of safety devices)

4. What are Types of Wires and Cables used for electricity distribution?

5. Importance of Earthing.

6. Explain in brief fluorescent, CFL, LED operations and typical power ratings.

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### Internal Assessment: 2

## Case study on Electricity consumption and billing of a home

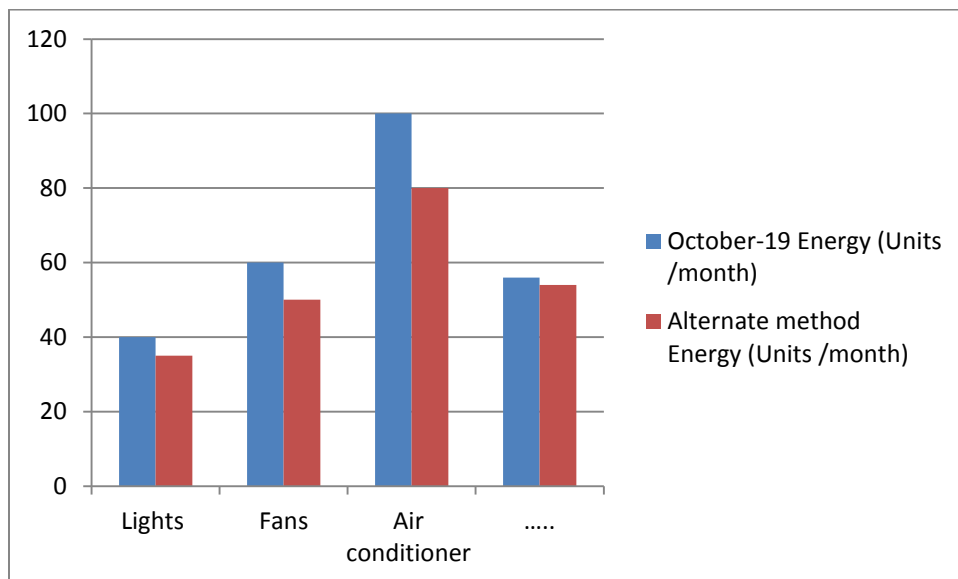
1. What is electrical power and energy? What are their units?
2. What is 1-unit electrical energy?
3. Estimate the electricity consumption of your home for two months (units/month) **December 2021 & January 2022.**  
(Following table is applicable as per actuals)

Sr. No.	Appliances	Power Rating (watts/appliance) (a)	No of appliances (b)	Utilisation in Hours per day (c)	Energy in Wh/1000 (units)/day (d=axbxc)/1000	Energy units/month dx30
1	Lights	40 20 20 15 10	1 1 1 2 2	10 01 03	0.4 0.02	12
2	Fans		3			
3	Air conditioner s		2			
4	Washing Machine		1			
5	Electric water heaters (Geysers )					
6	Mixer					
7	Electric Iron					

8	Micro-wave Oven					
9	Television					
10	Freeze					
11	Computer					
Total energy (Units/month)						

Plot a bar Graph showing appliances on x-axis and energy (units/month/appliance) on Y-axis. Draw the graph for both the months (Use can Microsoft Excel to plot graphs)

e.g.



4. Compare actual electricity units and bill (Rupees) with your estimation (Use electricity bill of recent month of your home. Attach copy of the same with assignment)

Energy consumption	Energy units/month	Billing Rate Rs./Unit	Total (Rs)
Estimated			
Actual			

5. How you can reduce electrical energy consumption of your home? Alternatives methods

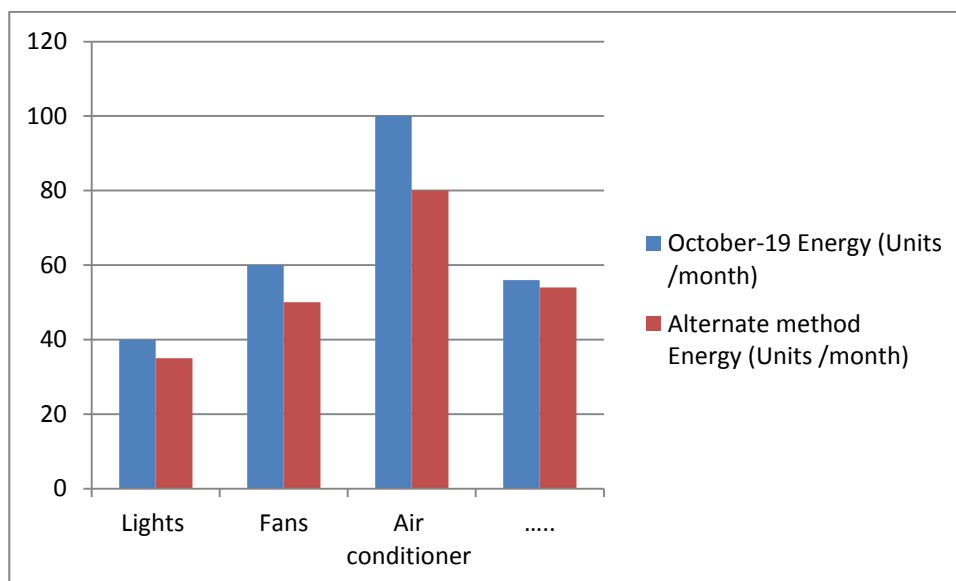
e.g. use of energy efficient lights..... Use of Gas water heater instead of electric water heater... etc.

6. Estimation of electrical energy consumption after alternate methods suggested in step-5.

Sr. No.	Appliances	Power Rating (watts)	Utilisation in Hours	Energy in kWh (units)/day	Energy units/month
1	CFL/LED lights....	20	10	0.2	6
2	----				
3	---				
4	-----				
5	....				
.					
..					
Total energy (units/month)					

Plot the bar graph showing the comparison of consumption of October-2019 with alternate methods suggested

e.g.



7. Energy saving units/month and expenses in Rs/month (after implementation of alternative method suggested in step

**Signature of faculty in-charge with Date:**