

Power Apparatus and System Design (EE49004), Spring-2021-22

Assignment: PASD_DDN_As-1

- **Date of announcement:** 3rd March 2022, **Date of submission:** 10th March 2022
- **Mode of submission:** prepare a single pdf for the main report (including calculations) and an excel file as an enclosure (for the calculations), and submit it to MSteam
- **Name convention for the pdf and excel:** [SerialNo_RollNo_PASD_as1.pdf](#),
[SerialNo_RollNo_PASD_as1.excel](#)
Note: Refer to 'roll-list' (uploaded under 'Files' of MSteam) for your 'SerialNo' information
- **Total Mark=50**
- Mention your details clearly on each of the document to be submitted (name, roll number, etc.)

➤ What to do and submit?

Prepare a brief and comprehensive report covering the following topics:

1. Electric power transmission and distribution in India (different stages, and their voltage levels from generation/power-plant to your home with suitable diagram). Also include the present electrical power generation scenario in India
(source: <https://powermin.gov.in/en/content/power-sector-glance-all-india>)
2. Electrical wiring at your home (starting from incoming power supply what are the equipment connected in sequence, and how their ratings are chosen)
3. What is the total power demand, and energy consumption at your home (list of all electrical appliances, their power rating, and energy demand)
(may be useful: <https://www.youtube.com/watch?v=IP1c3eItwCM&t=6s>)
4. Calculate the energy bill from your collected data and verify it with your energy bill (submit a copy of your electricity bill if there is no problem otherwise)
(may be useful: <https://www.youtube.com/watch?v=MUguFjdCHZ4>)
5. If you want to surrender your electric connection, and want to install solar photovoltaic with suitable energy storage, can you estimate the sizing for solar and battery, and also estimate the capital cost and payback period?
(may be useful: https://www.youtube.com/watch?v=8Eiel2_e17Q&t=1055s)

Note: The excel file should have all relevant calculations for part 3-5, and the pdf should have content from all parts (complete report).