

Birla Institute of Technology and Science, Pilani

BITS F462 Renewable energy

Mid Sem (Open Book)

Time: 90 minutes

Weightage: 25%

Date: 10/ 10 / 2023

Note: Assume suitable data wherever necessary.

Q.1. The LPG cylinder prices are rising; you have been given a task to explore opportunities to utilize solar energy for cooking in your hostel mess. Suggest a suitable solar-based system for the same. State step-by-step process for selection of such system. Explain with a neat sketch the working of the proposed system with a neat sketch. [10]

Q.2. Farmers are facing an issue of selling tomatoes as they are not getting a proper price for them also, transport cost has increased. Proposed a low-cost solar-based system to increase the shelf life of tomatoes. Explain the proposed system with a neat sketch, and also explain the important parameters you considered for such a system. [10]

Q.3. Which type of solar thermal collector is installed on your hostel rooftop? If it needs to be replaced, would you recommend the same solar collector, or do you have a better choice available? Justify your answer with proper reasoning and a neat sketch. [8]

Q.4. Which type of solar energy based system is used widely in India for electricity generation? Why is it so dominant over other solar technology? Compare them and explain with proper justification and neat sketches. [8]

Q.5 The differently-abled students of Amla Birla Kendra Pilani make wax candles and sell them. Suggest a cheaper solar energy application (with neat sketch and working) to help them in making wax candles. [8]

Q.6. Explain with neat sketches the working principles of a pyranometer(s) for the measurement of global, beam, and diffused radiation. [6]

*****BEST LUCK*****