

P. Pages : 2

Time : Three Hours



AW - 3544

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and chemical equations should be given wherever necessary.
 5. Illustrate your answer necessary with the help of neat sketches.

SECTION – A

1. a) What is an ideal coating. Is it possible to prepare a ideal coating in practice. How the collector coating can improve the performance of collector. 7
b) What are properties that a reflecting surface should posses? List the different materials with their properties. 7
2. a) Discuss briefly:- 6
1) Sensible heat storage.
2) Latent heat storage arrangement.
b) Explain the working of Double cover single basin solar still with a Neat sketch. 7
3. a) Explain the working principle of solar cells. Describe a basio photovoltaic system for power generation. 7
b) Explain the criteria for choice of materials for photovoltaic cells. 6
4. a) With the help of schematic diagram. Explain solar process steam system for industrial process. 7
b) What are the problems associated with solar industrial process heat. 6
5. a) Explain construction & working of packet bed thermal storage unit. 7
b) Explain the construction & working of Box type solar cooker with heat sketch. 6

SECTION – B

6. a) What are the advantages of tubular collectors. 4
b) Explain the term collector efficiency factor. 3
c) Explain the F-chart method to determine solar load fraction. 7

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| 7. | a) | Discuss the important parameter used for deciding the size of solar heating system for buildings. | 6 |
| | b) | Compare the relative merits & demerits of Li-Br water & Aqua ammonia vapour absorption cooling system. | 7 |
| 8. | a) | Discuss the methods for improving the efficiency of flat plate collector. | 6 |
| | b) | Derive an expression for temperature distribution across the absorber plate of LFPC. | 7 |
| 9. | a) | Explain different types of concentrating collectors with its advantages & disadvantages. | 7 |
| | b) | What are tracking requirements? Explain different tracking methods used for orientation of a collector. | 6 |
| 10. | a) | Explain the use of solar furnace state its advantages & disadvantages. | 6 |
| | b) | Discuss the parameters which affects the performance of concentrating collectors. | 7 |
