

# Unit 12 - Week 11

## Course outline

### How to access the portal

#### Week 1

#### Week 2

#### Week 3

#### Week 4

#### Week 5

#### Week 6

#### Week 7

#### Week 8

#### Week 9

#### Week 10

#### Week 11

Solar Energy and Solar Cells

Solar Photo Volatic Cells

Solar Water Heating

Design Strategies and the Green Design Process

Green Building Rating Systems

PDF file

Quiz : Assignment 11

Feedback Form

#### Week 12

### Solution of Assignment

## Assignment 11

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2019-10-16, 23:59 IST.**

1) Which of the following positions of PV cells will have the highest daily average insolation during solar months? 1 point

- Fixed horizontal  
 Tracking along horizontal axis  
 Tracking along vertical axis  
 Tracking along both horizontal and vertical axis

No, the answer is incorrect.

Score: 0

Accepted Answers:

Tracking along both horizontal and vertical axis

2) The gap between the conduction band and valence band in a conductor... 1 point

- Is very large  
 Coincides  
 Neither too large nor coincides  
 Bands are not present

No, the answer is incorrect.

Score: 0

Accepted Answers:

Coincides

3) Doping is done in the PV cell ... 1 point

- For lowering the gap of valence band and conduction band  
 To ensure continuous conduction of electrons  
 To increase solar insolation  
 None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

To ensure continuous conduction of electrons

4) For  $V_{mp} = 40$  V  $i_{mp} = 4$  A, calculate the efficiency at maximum Power condition for a PV panel of area  $1.4$  m<sup>2</sup> and Incident radiation intensity being  $850$ W/m<sup>2</sup>

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 10,15

(Type: Range) 0.1,0.15

5) A PV module is having  $K=1$ ,  $I=800$ W/m<sup>2</sup>,  $\tau=0.85$ ,  $\alpha=0.8$ ,  $U=2$ W/m<sup>2</sup> °C,  $T_{cell}=55$  and  $T_{ambient}=28$ , calculate the electric power generated in W from heat balance equation. 1 point

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 480,500

6) Given the normal incident radiation is  $700$  W/m<sup>2</sup>, the transmissivity of cover and absorptivity of absorber surface being  $0.85$  and  $0.93$  respectively, the mass flow rate of water through the collector as  $0.1$ kg/s, specific heat of water as  $4.2$  kJ/kg K, calculate the useful heat available in W, when conduction heat loss per degree for unit area of collector is  $4.2$  W/m<sup>2</sup>K, for collector area of  $10$ m<sup>2</sup> and temperature differential with ambient is  $20$ °C. 1 point

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 4650,4750

7) What is the LEED rating for energy cost saving of 21% in an existing building through whole building energy simulation? 1 point

- 5  
 6  
 7  
 8

No, the answer is incorrect.

Score: 0

Accepted Answers:

6

8) What are the maximum points given by LEED for on site production of renewable energy? 1 point

- 1  
 2  
 3  
 4

No, the answer is incorrect.

Score: 0

Accepted Answers:

3