

Unit 4 - Week 2: Solar Radiation Geometry

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Assignment 2

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

Due on 2020-09-30, 23:59 IST.

1) The zenith angle is the angle made by the sun's rays with the ____ to a ____ surface. **1 point**

- a. Normal, horizontal
 b. Tangent, horizontal
 c. Normal, vertical
 d. Tangent, vertical

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Normal, horizontal

2) The angle made in the horizontal plane between the horizontal line due south and the projection of the normal to the surface on the horizontal plane is: **1 point**

- a. Hour angle
 b. Surface azimuth angle
 c. Zenith angle
 d. Solar altitude angle

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. Surface azimuth angle

Common data for Q3-Q4

For Mumbai (longitude: 72°49' E and latitude: 18°54' N), incidence of direct irradiance/solar radiation is observed on an inclined surface at 45° from the horizontal with orientation of 30° west of south at 1.30 (solar Time) on December 15, 2019. The standard longitude for India is 81°44' E.

3) The value of Equation of time (E) is: **1 point**

- a. 4.654 min
 b. 4.934 min
 c. 5.312 min
 d. 4.105 min

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. 4.934 min

4) The angle of incidence of direct irradiance/solar radiation is: **1 point**

- a. 34.28 °
 b. 25.56 °
 c. 30.81 °
 d. 44.24 °

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. 34.28 °

5) The number of daylight hours (sunshine hours) in Guwahati on January 1st and July 1st are ____ and ____ hours respectively. (The latitude of Guwahati is 26.15° N). **1 point**

- a. 14.24 and 10.54
 b. 10.40 and 14.24
 c. 10.39 and 13.60
 d. 13.51 and 14.24

No, the answer is incorrect.
Score: 0

Accepted Answers:
c. 10.39 and 13.60

6) On June 22, the declination angle will be: **1 point**

- a. Zero
 b. +23.45°
 c. -23.45°
 d. +180°

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. +23.45°

7) The instrument used to measure solar radiation flux is called: **1 point**

- a. Pyranometer
 b. Net radiometer
 c. Gardon gauge
 d. Pyrhellometer

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. Pyranometer

Common data for Q8-Q9

For New Delhi (28°35' N, 77°12' E), incidence of solar radiation is observed at 2:30 P.M., on 20th February. The standard longitude for India is 81°44' E.

8) The solar time at 2:30 P.M., on 20th February will be: **1 point**

- a. 1:57.59 hours
 b. 2:30 hours
 c. 1:59.50 hours
 d. 1:45.59 hours

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. 1:57.59 hours

9) The zenith angle of the sun at 2:30 P.M., on 20th February will be: **1 point**

- a. 41.557°
 b. 42.557°
 c. 41. 215°
 d. 42. 215°

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. 42.557°

10) Path length of radiation through the atmosphere to the length of path when the sun is at zenith is called: **1 point**

- a. Declination
 b. Air mass
 c. Azimuth
 d. Solar Constant

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. Air mass

11) Angle made by radial line joining the location to the centre of the earth with the projection of the line on the equatorial plane is called: **1 point**

- a. Zenith angle
 b. Latitude
 c. Hour angle
 d. Declination

No, the answer is incorrect.
Score: 0

Accepted Answers:
b. Latitude

12) For 1 degree change in longitude, the change in solar time is: **1 point**

- a. 4 minute
 b. 4 second
 c. 1 minute
 d. 1 hour

No, the answer is incorrect.
Score: 0

Accepted Answers:
a. 4 minute