

Unit 10 - Week 9

Course outline

How to access the portal

Week 1

Week 2

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Week 9

Urban Heat Island: Radiation Concepts

Urban Heat Island: Urban Canopy Layer

Evapotranspiration: Theory and Models

Evapotranspiration: Case Study and Surface Water Balance

Quiz : Assignment 9

PDF File

Feedback Form

Week 10

Week 11

Week 12

Solution of Assignment

Assignment 9

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

Due on 2019-10-02, 23:59 IST.

1) Match the following

2 points

	Definition		Angle
(A)	Angle between sun ray projected on horizontal surface and true north (reference) measured clockwise	(1)	Incident angle
(B)	Angle between sun ray and its projection on horizontal surface	(2)	Surface solar azimuth
(C)	Angle between true north (reference) and projection of normal to wall on horizontal surface	(3)	Surface azimuth
(D)	Angle between sun ray and normal to the wall	(4)	Azimuth angle
(E)	Angle between projection of normal to wall on horizontal surface and sun ray projected on horizontal plane	(5)	Altitude angle

- A-4, B-5, C-3, D-1, E-2
 A-4, B-5, C-3, D-2, E-1
 A-3, B-5, C-4, D-2, E-1
 A-3, B-5, C-4, D-1, E-2

No, the answer is incorrect.
Score: 0

Accepted Answers:
A-4, B-5, C-3, D-1, E-2

2) Choose the correct option that places the following geographical locations in the descending order of their surface runoff.

2 points

- Forest, Low plants, Commercial area, Residential area
 Forest, Commercial area, Residential area, Low plants
 Commercial area, Residential area, Low plants, Forest
 Residential area, Low plants, Forest, Commercial area

No, the answer is incorrect.
Score: 0

Accepted Answers:
Commercial area, Residential area, Low plants, Forest

3) Predominant loss of water from soil surface occurs by [Hint: Choose the most appropriate option]

2 points

- Evaporation
 Transpiration
 Evapotranspiration

No, the answer is incorrect.
Score: 0

Accepted Answers:
Evaporation

4) Identify the correct mass balance equation(s) that relate(s) precipitation (P), stream flow (Q), groundwater recharge (D), evapotranspiration losses (ET) and storage (ΔS)

2 points

- $\Delta S = P - ET - Q - D$
 $\Delta S = P + ET - Q - D$
 $\Delta S = P - ET + Q + D$
 $\Delta S = P + ET + Q - D$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\Delta S = P - ET - Q - D$

5) The ratio of 'rate of evapotranspiration for a particular crop' to the 'reference evapotranspiration rate' is known as

2 points

- plume rise
 crop coefficient
 surface resistance
 crop factor

No, the answer is incorrect.
Score: 0

Accepted Answers:
crop coefficient

Questions 6-10 are linked

Consider albedo of concrete as 0.35 and emissivity as 0.8; direct and diffused radiation on horizontal surface are 500 W/m² and 200 W/m² respectively; Equivalent temperature of concrete is 27°C, Stefan-Boltzmann's constant=5.67×10⁻⁸ Wm⁻² K⁻⁴ and longwave radiation from outer space is 200 W/m²

6) Total incoming shortwave radiation (in W/m²) is

2 points

- 200
 500
 600
 700

No, the answer is incorrect.
Score: 0

Accepted Answers:
700

7) Total outgoing longwave radiation (in W/m²) is

2 points

- 40
 367.42
 407.42
 457.43

No, the answer is incorrect.
Score: 0

Accepted Answers:
407.42

8) Net (incoming minus outgoing) shortwave radiation incident on earth's surface (in W/m²) is

2 points

- 150
 455
 625
 700

No, the answer is incorrect.
Score: 0

Accepted Answers:
455

9) Net (outgoing minus incoming) longwave radiation emitted from earth's surface (in W/m²) is

2 points

- 150
 207.42
 257.42
 307.42

No, the answer is incorrect.
Score: 0

Accepted Answers:
207.42

10) Net radiation (both shortwave and longwave) received on earth's surface (in W/m²) is

2 points

- 247.58
 300.47
 353.68
 420.23

No, the answer is incorrect.
Score: 0

Accepted Answers:
247.58