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Courses » Energy Efficiency, Acoustics and daylighting in Building

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## Unit 3 - Environmental factors and climatic zones

Register for  
Certification exam

### Course outline

How to access  
the portal

### Introduction

### Environmental factors and climatic zones

- Introduction to Environmental Factors-6
- Introduction to Environmental Factors-7
- Comfort and Heat Transfer Concepts
- Heat Flow in Buildings-1
- PDF file of lecture slides (Week 2)
- Quiz : Assignment 2
- Solution of assignment 2

### Heat Transfer Concepts in Buildings

## Assignment 2

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-02-13, 23:59 IST.**

*Note : In Numeric type questions, kindly please enter the numeric value only upto 2 decimal places. Do Not enter units or some other expression as this might evaluate the answer as wrong. eg: if answer is '45.60' then '45.60 degrees' as an answer would be taken as wrong by the computer.*

1) Equivalent temperature of all surfaces, which produces the same radiative effect as the individual temperatures of each surface is termed as: **2 points**

- Globe temperature
- Dry bulb temperature
- Mean radiant temperature
- Wet bulb temperature

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Mean radiant temperature*

2) Graphical representation of the physical and thermodynamic properties such as dry bulb temperature, wet bulb temperature, humidity, enthalpy, and density of air is known as: **2 points**

- Psychrometric chart
- CET nomogram
- Bioclimatic chart
- All of the above

**No, the answer is incorrect.**

**Score: 0**

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Ventilation

Fundamentals of  
Acoustics and  
NoiseSound  
Transmission

Noise Control

Fundamentals of  
DaylightingDaylighting  
DesignInteraction  
Session Air quality index Air velocity**No, the answer is incorrect.****Score: 0****Accepted Answers:***Air quality index*

4) Calculate U value of a wall of thickness 300 mm.

Given :

 $k = 1.50 \text{ W/m degC}$ ,  $h_o = 12.5 \text{ W/m}^2 \text{ degC}$  $h_i = 8 \text{ W/m}^2 \text{ degC}$ **No, the answer is incorrect.****Score: 0****Accepted Answers:***(Type: Range) 2.3,2.7***5 points**

5) Given a roof (overall area  $5 \times 4 \text{ m}^2$ ) consisting of 60 mm thick roof tile at top (thermal conductivity,  $k = 0.4 \text{ W/m}^\circ\text{K}$ ) and an insulation of 100 mm below it (thermal conductivity,  $k = 0.05 \text{ W/m}^\circ\text{K}$ ), supported on a 150 mm thick R.C.C (thermal conductivity,  $k = 1.5 \text{ W/m}^\circ\text{K}$ ) slab and having 12.5 mm plaster finish (thermal conductivity,  $k = 0.7 \text{ W/m}^\circ\text{K}$ ) at the ceiling. Surface conductance are:  $18.5 \text{ W/m}^2 \text{ }^\circ\text{K}$  and  $12.5 \text{ W/m}^2 \text{ }^\circ\text{K}$ , respectively for outside and inside surfaces respectively. Calculate the U value of the roof.

**No, the answer is incorrect.****Score: 0****Accepted Answers:***(Type: Range) 0.40,0.42***5 points**

6) If the temperature difference is 5 degree Celsius between outside and inside. What will be the average conduction heat flow for a roof having same area and thermal property as the roof given in question 5.

**No, the answer is incorrect.****Score: 0****Accepted Answers:***(Type: Range) 40,42***4 points**

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