

Question 1

Radiation depends on
a. material
b. surface properties
c. temperature

Selected Answer: All of the options

Question 2

In view factor analysis, which of the following are the assumptions made?
a. The surfaces are diffuse emitters and diffuse reflectors
b. The medium does not absorb, emit, or scatter radiation
c. It is valid in air medium only
d. It is valid for both isothermal and non-isothermal surfaces

Selected Answer: a and b only

Question 3

Radiation heat transfer is faster than conduction and convection.

Selected Answer: True

Question 4

The emitted radiation of a blackbody surface varies with

Selected Answer: temperature only

Question 5

All black surfaces are considered as blackbodies.

Selected Answer: False

Question 1

Which of the following statement(s) about blackbody objects is/are correct?

- a. They are ideal emitters and absorbers
- b. They can be diffuse and non-diffuse emitters
- c. They radiate the maximum thermal energy at a given temperature.

Selected Answer: a only

Response Feedback: Blackbody objects are ideal emitters and absorbers, diffuse emitters only, and radiate the maximum thermal energy at a given temperature.

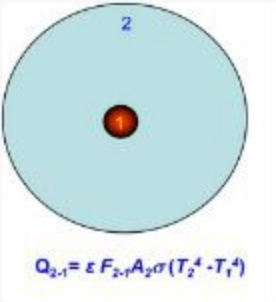
Question 2

Which of the following reciprocity relations is incorrect?

Selected Answer: $A_{17}F_{17-19}=A_{16}F_{17-16}$

Question 3

Is the equation for radiation heat transfer from non-blackbody surface 2 to 1 correct?



Selected Answer: True

Question 4

All black surfaces are considered as blackbodies.

Selected Answer: False

Question 5

In view factor analysis, which of the following are the assumptions made?

- a. The surfaces are diffuse emitters and diffuse reflectors
- b. The medium does not absorb, emit, or scatter radiation
- c. It is valid in air medium only
- d. It is valid for both isothermal and non-isothermal surfaces

Selected Answer: a and b only

Question 1

The emitted radiation of a blackbody surface varies with

Selected Answer: temperature only

Question 2

Shiny surfaces with lower emissivity lose heat faster by radiation as compared to dull surfaces (higher emissivity).

Selected Answer: False

Question 3

The properties of a gray surface are independent of direction.

Selected Answer: False

Question 4

Radiation depends on

- a. material
- b. surface properties
- c. temperature

Selected Answer: All of the options

Question 5

Which of the following reciprocity relations is incorrect?

Selected Answer: $A_{17}F_{17-19} = A_{16}F_{17-16}$

Friday, November 12, 2021 7:40:13 PM SGT