

Name:

Date: 07 March 2023

Topic: HBL Worksheet

Instructions: Using the textbook as reference, answer all questions.

Submit the assignment via Google Classroom.

Question 1 – Complete the statements:

What is Conduction?

- a) Conduction is the transfer of heat energy

What is Convection?

- b) Convection is the transfer of heat energy

What is Radiation?

- c) Radiation is the transfer of heat energy

Question 2 – To show understanding of the different types of heat transfer, answer the questions on how each method works.

- a) Conduction of heat energy is faster in \_\_\_\_\_ than \_\_\_\_\_

Conduction of heat energy is better in solid than liquid or gas

When we need to heat transfer heat quickly such as cooking, the cooking pan is made up of heat such as \_\_\_\_\_ and \_\_\_\_\_.

However, when we need heat energy to be lost slowly, we need to use a material that is a \_\_\_\_\_ of heat such as \_\_\_\_\_ and \_\_\_\_\_.

- b) Convection current in liquid happens when one part of the liquid is heated. The heated liquid becomes \_\_\_\_\_ and it starts to \_\_\_\_\_. The colder liquid is \_\_\_\_\_ will starts to \_\_\_\_\_. These movements of hot liquid and cold liquid will continue until heat energy is evenly distributed.
- c) The rate of the transfer of heat energy by radiation depends on the following factors. For each factor, describe how it affect the rate of radiation:

Temperature of object: The \_\_\_\_\_ the temperature of object, the \_\_\_\_\_ rate of radiation from the object.

Surface area of object: The \_\_\_\_\_ the surface area, the \_\_\_\_\_ the rate of radiation from the object.

Type of surface:

Smooth and shiny surfaces are poor \_\_\_\_\_ of heat. This prevents heat energy to be \_\_\_\_\_ by radiation.

Smooth and shiny surfaces are poor \_\_\_\_\_ of heat. This prevents heat energy to be \_\_\_\_\_ by radiation.

In order for a flask to keep water hot in it, the inner surface should be painted \_\_\_\_\_.

In order for a pan to be heated faster, the outside of the pan should be painted \_\_\_\_\_.