

Task 16: Year 8 Science 2017

Physics 2 Test: Heat

Name: Solutions

M/C mark: _____ 10 Marks

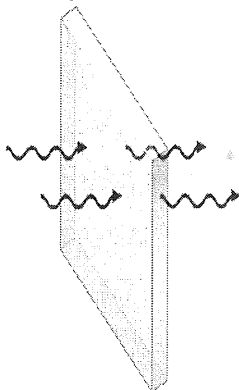
Written: _____ 20 Marks

TOTAL: _____ 30 MARKS

SECTION 1: MULTIPLE CHOICE (1 mark each)

Circle your answer on the multiple choice answer sheet on page 3.

1. Which of the following is a type of potential energy?
 - a) mechanical
 - b) light
 - c) chemical
 - d) heat
2. Which of these is not a method of heat transfer?
 - a) convection
 - b) conduction
 - c) radiation
 - d) insulation
3. Which of the following is the most effective heat insulator?
 - a) metal
 - b) wood
 - c) air
 - d) a vacuum
4. A material which easily allows heat to move through it is called
 - a) an insulator.
 - b) a conductor.
 - c) a resistor.
 - d) a circuit.
5. When heat radiation hits a transparent surface such as glass, it may travel straight through, as shown in the diagram below.



This is called

- a) transmission
- b) reflection
- c) absorption
- d) refraction

6. Heat waves are a form of electromagnetic radiation and can also be called
 - a) gamma rays
 - b) X-rays
 - c) ultraviolet
 - d) infra red
7. Which type of surface tends to be a good heat absorber?
 - a) dull and dark
 - b) shiny and light
 - c) sparkly and colourful
 - d) transparent
8. Which of these is an adaptation to prevent heat loss?
 - a) sweating
 - b) goose bumps
 - c) becoming flushed
 - d) large ears or fins
9. Most of the heat energy lost from a house in winter is lost through the
 - a) floor.
 - b) roof.
 - c) windows.
 - d) doors.
10. The Coolgardie safe was invented during the 1890s gold rush to keep store cold food. It cools because of
 - a) insulation.
 - b) radiation.
 - c) evaporation.
 - d) conduction.

Section 1: Multiple Choice Answer Sheet

Circle your answers for the multiple choice section:

- | | | | | |
|-----|----------|----------|----------|----------|
| 1: | A | B | <u>C</u> | D |
| 2: | A | B | C | <u>D</u> |
| 3: | A | B | C | <u>D</u> |
| 4: | A | <u>B</u> | C | D |
| 5: | <u>A</u> | B | C | D |
| 6: | A | B | C | <u>D</u> |
| 7: | <u>A</u> | B | C | D |
| 8: | A | <u>B</u> | C | D |
| 9: | A | B | <u>C</u> | D |
| 10: | A | B | <u>C</u> | D |

TOTAL MARK FOR M/C: _____ /10 MARKS

SECTION 2: WRITTEN

Write your answers on the lined paper provided.

1. Explain each of the following, using correct terminology to describe energy transfers:

- a) Saucepans have plastic handles.

insulator - prevent conduction
(1) (1) (2 marks)

- b) Putting a metal skewer into a potato will make it bake quicker.

conductor - promote conduction
(1) (1) (2 marks)

- c) It is warmer to wear two thin jumpers than one thick one. (1)

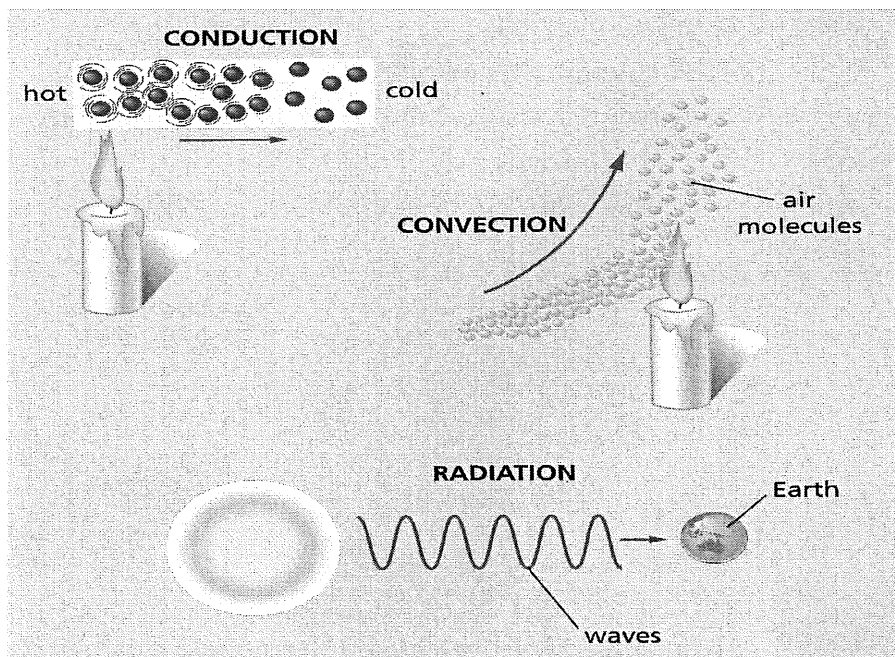
Air layer - insulator - traps heat in
prevent conduction, convection + radiation.
(1) or similar (2 marks)

2. Explain the difference between heat and temperature.

heat → net amount of energy (kinetic) within a material or process of energy transfer
temp → Average kinetic energy (2 marks)

3. The diagram below shows conduction, convection and radiation.

Explain how well each of these methods occur in solids, liquids, gases and space.



2018
change to
a table.

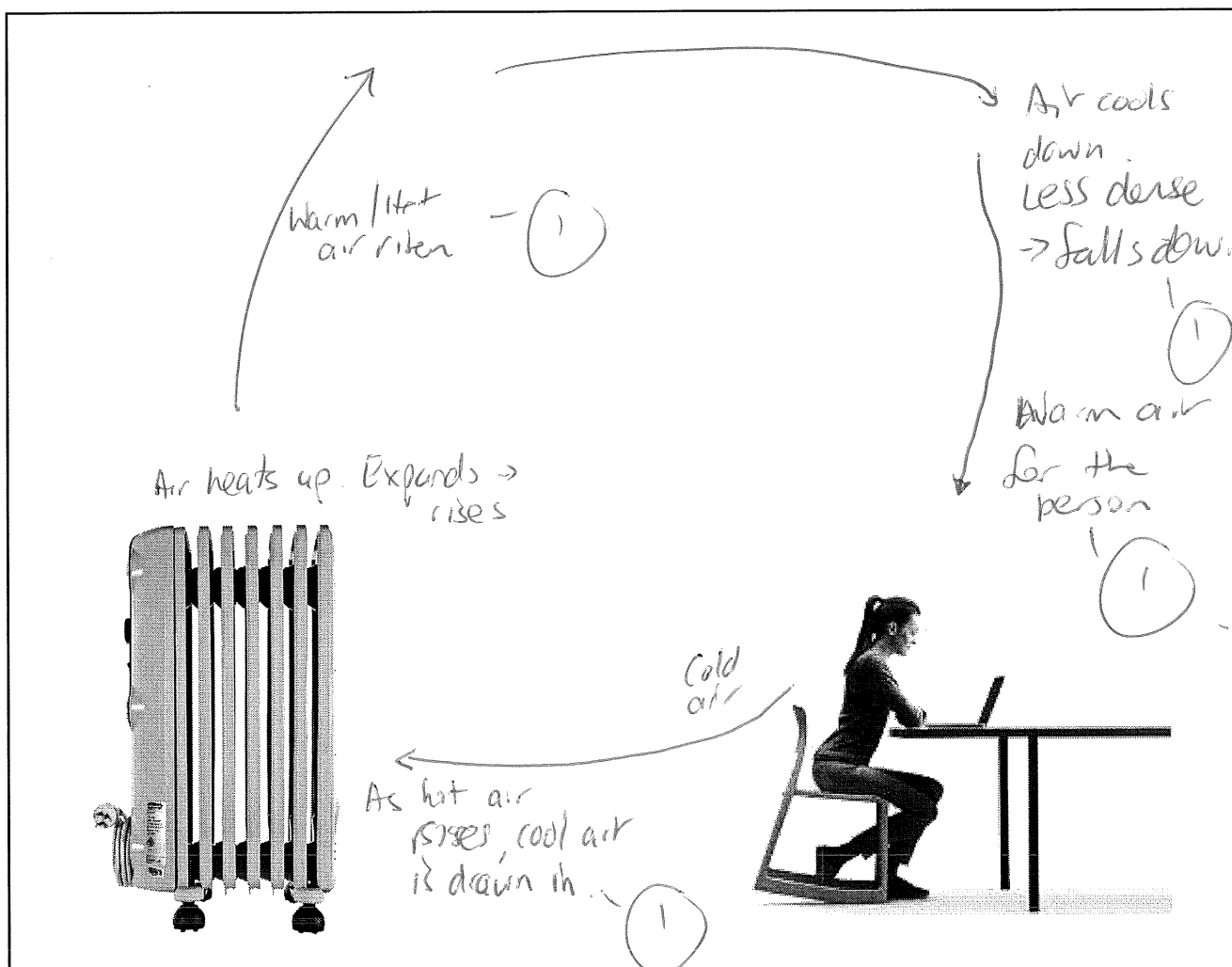
Solids: Conduction - v good.
convection + radiation - no good. (2 marks)

Liquids: conduction + convection - good
radiation - no good (2 marks)

Gases: convection - good
conduction + radiation - no good. (2 marks)

Space (Vacuum - no air) radiation - good
conduction + convection - no good (2 marks)

4. Draw a labelled diagram to show how a convection/oil heater is used to heat a cold room and warm the person sitting at the desk. Explain within the diagram what is occurring and why.



(4 marks)

END OF TEST (OUT OF 30 MARKS)