

Paper 1

Answer **all** questions. Each question is followed by four options, **A, B, C** and **D**. For each question, choose **one** answer only.

1.



The diagram above shows changes in the state of matter. What are processes *P* and *Q* ?

- | | |
|-----------------------|--------------|
| <i>P</i> | <i>Q</i> |
| A Condensation | Boiling |
| B Melting | Condensation |
| C Sublimation | Freezing |
| D Melting | Condensation |

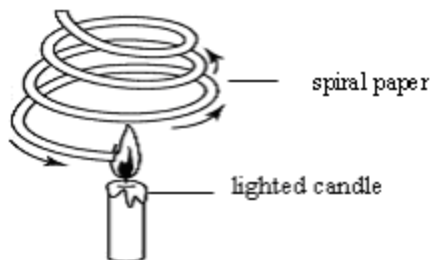
2.

Particles of liquid move fast and freely. When particles of liquid receive enough energy, they will free themselves.

Based on the above description, name the process involved.

- A** Melting
- B** Condensation
- C** Boiling
- D** Freezing

3.

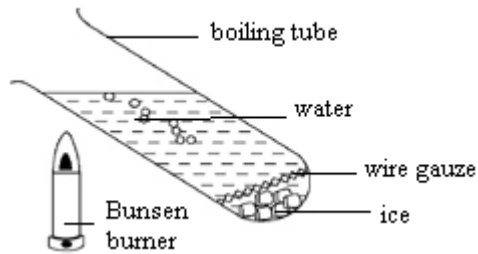


Among the methods of heat transfer, which causes the spiral paper to spin?

- A** Radiation
- B** Conduction
- C** Convection

D Convection and radiation

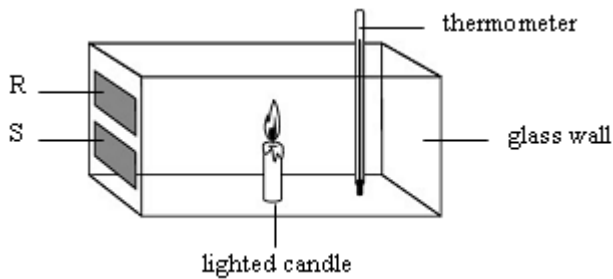
4.



The above diagram shows ice cubes at the bottom of a boiling tube are not melting although the water at the top is boiling. This experiment shows that

- A water is a poor conductor of heat
- B wire gauze conducts heat away fast
- C heat is transferred by convection
- D the wall of the boiling tube conducts heat away fast

5.



The diagram above shows a model of a ventilation system of a house. *R* and *S* represent two openings in the house. What must be done in order to make the temperature in the house to drop to its lowest level?

	Opening R	Opening S
A	Close	Close
B	Close	Open
C	Open	Close
D	Open	Open

6. Of the following materials, which is the best conductor of heat?

- A Glass
- B Copper
- C Carbon
- D Zinc

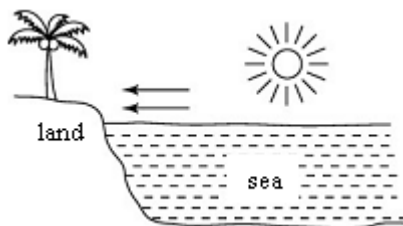
7. Which of the following shows the application of good insulator of heat?
- A Copper metal is used to make heating coil
 - B Hot water pipe is wrapped with glass wool
 - C Wire gauze is made of iron
 - D Wok and pot are made from aluminium
8. Ice cream is wrapped with paper to delay it from melting. This is because paper is a
- A poor conductor of heat
 - B poor radiator of heat
 - C good radiator of heat
 - D good conductor of heat
9. A wooden tongs is used to hold a test tube during heating. This is to prevent the heat from being transferred to the hand through the process of
- A conduction
 - B radiation
 - C conduction and radiation
 - D conduction and convection

10. Particles vibrate and transfer their vibrations to their neighbouring particles.

Which substance may possibly contain such particles?

- A Water
- B Oxygen
- C Aluminium
- D Mercury

11.

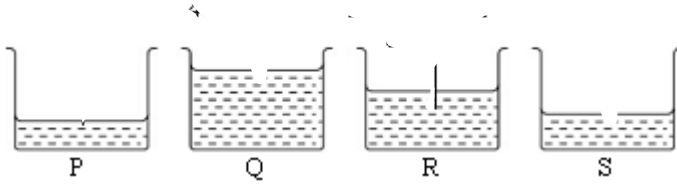


What is the phenomenon taking place in the diagram above?

- A Land breeze
- B Air ventilation
- C Northern wind
- D Sea breeze

12. Why is a pan made from good conductor of heat?
- A So that it will release heat faster
 - B So that the wok will not rust easily
 - C So that the wok becomes light and easy to hold
 - D So that heat from the fire will be quickly transferred to the food being cooked

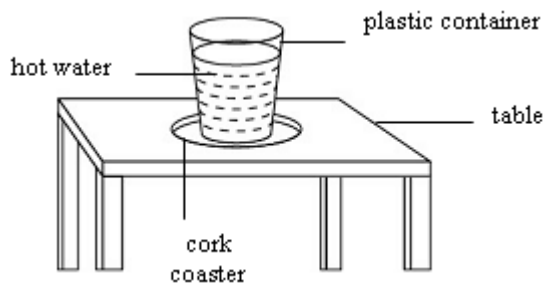
13.



The diagram above shows four beakers containing different quantities of water but with the same temperature. Which of the beakers contains the highest content of heat?

- A P
- B Q
- C R
- D S

14.



In the diagram above, most of the heat from the water is lost through

- A radiation only
- B radiation, conduction and convection
- C convection and radiation
- D convection and conduction

15.

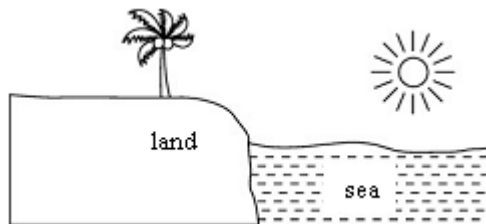
Process of heat transfer that occurs from one heat source to its surrounding area without any medium.

In which of the following phenomena, does this heat transfer occur?

- I Heat from fire reaching your face
- II Land breeze
- III Ventilation in a house

- A I only
- B I and II only
- C II and III only
- D I, II, and III

16.

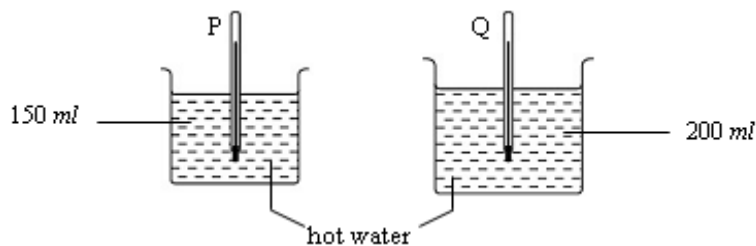


What causes the formation of sea breeze during the daytime in the diagram above?

- I Land becomes warmer than the sea
- II Air moves from the sea to the land
- III Cool air from the land moves to replace warm air at the sea

- A I only
- B I and II only
- C II and III only
- D I, II, and III

17.

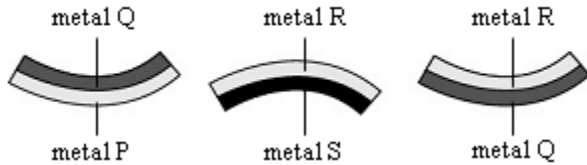


Thermometers *P* and *Q* in the diagram above both shows a reading of 100 °C. This shows that water in

- I both beakers have the same temperature
- II both beakers have the same heat content

- III** beaker *Q* has a higher heat content than that of beaker *P*
- A** I and II only
B I and III only
C II and III only
D I, II, and III

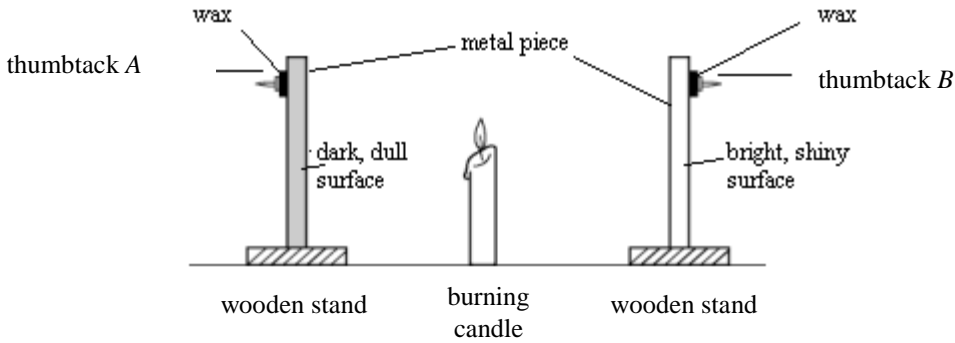
18.



Which metal has the highest expansion rate?

- A** Metal *P*
B Metal *Q*
C Metal *R*
D Metal *S*
19. Telephone wires on the pole are not taut so that they can
- A** expand during a cold night
B contract during a hot day
C expand during a hot day
D contract during a cold night
20. Equipment based on the principle of expansion and contraction include
- I** thermostat
II mercury thermometer
III automatic fire alarm
- A** I only
B I and II only
C II and III only
D I, II, and III

Paper 2
 Answer the question.



The diagram above shows the set up of apparatus to study the absorption of heat by different surface of wooden stand.

(a) State the relationship between the drop of thumbtack and the type of surface of wooden stand.

(b) State the variables involved in this experiment.

Manipulated variable	
Responding variable	
Controlled (constant) variable	

(c) Predict which thumbtack will fall first.

(d) What conclusion can you make from this experiment?

(e) Explain why the lorry's petrol tank is painted with shiny aluminium paint.

(f) If thumbtack A takes 90 seconds to fall, predict by circle the time probably taken by the thumbtack B to fall.

60 seconds	90 seconds	120 seconds
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Answers:

Paper 1

1	D	11	D
2	C	12	D
3	C	13	B
4	A	14	C
5	D	15	A
6	B	16	B
7	B	17	B
8	A	18	A
9	A	19	D
10	C	20	D

Paper 2

- (a) A dark, dull surface is a good heat absorber
- (b) Type of surface; Drop of thumbtack; Distance of the wooden stand surface from the flame
- (c) Thumbtack A
- (d) A dark, dull surface is a good absorber of heat
- (e) Aluminium paint is a good reflector of heat but a poor absorber of heat
- (f) 120 seconds