Heat Transfers (KS3)

Section A – Recall (1 mark)

Q1 (1 mark)
What is temperature a measure of?

Q2 (1 mark)
In which direction does heat energy always transfer?

Q3 (1 mark)
What is thermal equilibrium?

Q4 (1 mark)
What is conduction?

Q5 (1 mark)
What is convection?

Q6 (1 mark)
What is radiation in terms of heat transfer?

Q7 (1 mark)
Name one good thermal insulator.

Q8 (1 mark)
What happens to particles when a substance is heated?

Q9 (1 mark)
Which state of matter transfers heat mainly by convection?

Q10 (1 mark)
What is the main energy transfer in a vacuum?

Section B – Understanding (2–3 marks)

Q11 (2 marks)
Explain why a hot drink left in the *Learntit* office eventually cools down to room temperature.

Q12 (2 marks)
Explain why metals are good conductors of heat.

Q13 (2 marks)
Explain why air is a good insulator.

Q14 (3 marks)
Explain how conduction transfers heat through a solid.

Q15 (2 marks)
Explain how convection currents form in a liquid or gas.

Section C – Application (3–4 marks)

Q16 (3 marks)
A metal spoon gets hot when left in a cup of hot tea. Explain why.

Q17 (4 marks)
A room heater is placed near the floor. Explain how it warms the room using convection.

Q18 (4 marks)
A *Learntit* student standing near a fire feels heat even without touching it. Explain how heat is transferred.

Q19 (4 marks)
Explain why foam or wool is used in clothing for insulation.

Q20 (4 marks)
A hot drink cools down over time. Explain how energy transfer reduces temperature difference.

Section D – Extended Response (6 marks)

Q21 (6 marks)
Explain how heat is transferred between objects using conduction, convection and radiation. Include how energy moves from hotter to colder objects.

Q22 (6 marks)
Explain how thermal equilibrium is reached and how insulation can slow heat loss. Include:
- temperature difference
- energy transfer direction
- role of insulators

Total: ____ / 52
Percentage: _____%