

AQA, OCR, Edexcel

A Level

A Level Biology

Temperature Regulation Questions

Name:

M

M

E

Mathsmadeeasy.co.uk

Total Marks: /14

Temperature Regulation

Internal temperature regulation is important to ensure that the integrity of cells and enzymes is maintained so that cellular processes can occur efficiently.

1. Metabolic reactions within all organisms release heat; however different organisms have different metabolic rates which affects the amount of heat generated. This means that animals have developed different mechanisms of ensuring that their internal body temperature is correct for them to function at an optimum level.

a) Animals are either classified as endotherms or ectotherms depending on how they control their internal body temperature. Ectotherms cannot control their body temperature through metabolic processes alone.

i) How have ectotherms adapted to control their core body temperature? (2 marks)

ii) Why are endotherms able to control their core body temperature internally even at low external temperatures? (1 mark)

b) Thermoregulation is the term for the mechanisms that regulate body temperature.

i) Sweating is one mechanism by which the mammalian body has adapted. Explain the mechanism of sweating. (2 marks)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

ii) Complete the table below to explain how mammals control their internal body temperature. (6 marks)

Heat Loss Mechanisms	Heat Production Mechanisms	Heat Conservation Mechanisms

iii) Explain how the brain monitors the body temperature of mammals (3 marks)