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## Answers

# Time of death

## Answers to practice exam questions on pp. 11–15

**Martin Rowland**

1 Calcium ions bind to troponin in the troponin-tropomyosin complexes (present in the muscle cells). This exposes the binding sites on the actin filaments, stimulating the formation of actin-myosin cross bridges / stimulating myosin heads to bind to the actin filaments.

2 A value in the range of 28 to 30 days (ago) = 2 marks

If the answer is incorrect, allow **one** mark for one of the following:

- correctly drawn lines but the value taken from the wrong curve of the nomogram
- a correctly drawn line from 20°C rectal temperature to 15°C ambient temperature
- a correctly drawn line from the centre of the circle to the intersection of the line on the nomogram and the incorrectly drawn line.

# The Daffodil DNA Project

## Answers to practice exam questions on pp. 34–37

**Martin Rowland**

1 Two organisms belong to the same species if they are able to produce fertile offspring. Since the daffodil hybrids are fertile, the parent plants cannot be of different species as originally thought.

2 Any **two** of:

- Longer / more comprehensive 'reads' than traditional method.
- No need for PCR amplification, so quicker than traditional method.
- (Sequencing signals are collected directly when the target nucleic acid passes through the nanopore so) no need for fluorescent molecular markers.
- (Sequencing signals are collected directly when the target nucleic acid passes through the nanopore so) no need for optical imaging.
- Sequencing results / library of results are obtained / produced in real time.