Review Worksheet: Fossilisation and Absolute Dating

Name: ……

*Do these questions, using your learning resources. Look at the "marks" to give you an idea of the level of detail required in the response (formative only – does not count towards your grade). At the end, mark your work, correct it, and fill in the reflection section. Questions marked * require you to use reasoning, inferring and application of knowledge, or perhaps extra research to get the answer. It won't be right there in the text.*

1: Explain how the process of permineralisation occurs to fossilise remains.
(4 marks)

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2: List the conditions required for fossilisation to occur and explain why each is important.
(9 marks)

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3: What age of rock is able to be measured by K-Ar dating?
(1 mark)

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4: A group of palaeontologists find a fossil in a rock. They send the rock for analysis and find that it contains 25ug of K-40 and 75ug of Ar-40. How long ago was the fossil formed?
(3 marks)

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5: A person walking in a remote area of Australia finds a fossilised shark tooth lodged in the surrounding rock. A sample of the rock is sent for analysis. It is found to contain 96 atoms of K-40 for every 4 atoms of Ar-40. How long ago was the fossil formed?
(2 marks)

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6: What is the half-life of Carbon-14?
(1 mark)

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7: What age of sample is Radiocarbon (Carbon-14) dating able to measure?
(1 mark)

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8: A skull of an adult human is found in a cave. Police are called and are unsure whether the skull is from a recent victim of crime, or is much older. Their forensic team take a small sample of the bone tissue and send it to the lab for radiocarbon dating.

The lab results show that the bone sample contains 12.5mg of carbon-14. A fresh bone sample of the same mass contains 100mg of carbon-14.

a) How many half-lives have passed since the person died?
(1 mark)

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b) Should the police investigate the remains as a modern crime? Explain your answer. *
(5 marks)

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9: A person has inadequate dietary intake of calcium. How does their body respond to ensure that blood calcium levels remain within homeostatic levels, and what is the long term effect on their body if they do not begin to eat enough calcium?
(6 marks)

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Go back and mark your work using the marking key provided. What score did you get? /32

I included enough detail and scientific terminology in my answers.

I was able to find information in the text/powerpoint presentation.

*I was able to reason and infer where the information wasn't directly in the text (questions with *).*

I marked my work and wrote down any answers where I missed marks.