**Review Worksheet ANSWERS: Parathyroids**

1: Where are the parathyroid glands located?

(1 mark)

*Within the thyroid gland.*

2: What hormone is produced by the parathyroid glands?

(1 mark)

*Parathyroid hormone (PTH)*

3: What triggers the release of PTH?

(1 mark)

*Decreased blood calcium ion*

4: Where is thyrocalcitonin produced?

(1 mark)

*In the thyroid gland*

5: What triggers the release of thyrocalcitonin?

*Increased blood calcium ion*

6: Parathyroid hormone and Thyrocalcitonin have the same target tissues. What are they?

(3 marks)

*The bones, The intestine, The kidney tubules*

7: Describe the sequence of events that would occur to restore homeostasis if blood Ca2+ levels rose:

(6 marks)

*Rising blood Ca2+ levels are detected by the thyroid (1), which would release thyrocalcitonin (1), which would stimulate the bone to take up calcium (1), decrease calcium absorption from the intestines (1), and increase calcium excretion in the kidneys (1). This lowers the the blood Ca2+ back to homeostatic levels (1).*

8: If someone did not have adequate dietary calcium intake:

1. What would happen to their blood Ca2+ levels?

(1 mark)

*They would decrease (1)*

1. What sequence of events would occur to bring their blood *Ca2+* back to homeostatic levels?

(5 marks)

*Low Ca2+ levels would be detected by the parathyroids (1), which would release Parathyroid Hormone (1). PTH would stimulate Ca2+ release from the bones back into the blood stream (1), increased reabsorption of Ca2+ in the kidneys (1), and increased absorption of Ca2+ from the intestine (1), to bring the blood Ca2+ back to homeostatic levels.*

1. If the inadequate dietary intake of calcium continued, what would the long term effect be on their bones and why? \*

(3 marks)

*They would lose bone density (1). The decreased blood calcium would cause persistent release of PTH from the parathyroids,(1) causing calcium to be released from bone to maintain the levels in the blood. (1)*