**Review Worksheet: Body Fluid Homeostasis**

**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: Define the following terms:

(3 marks)

Intracellular fluid: *……………………………………………………………………………………………...*

Intercellular (Interstitial) fluid: *………………………………………………………………………………...*

Plasma: *…………………………………………………………………………………………………………*

2: If the intracellular fluid has greater solute concentration than the intercellular fluid, what fluid transfer will occur?\*

(4 marks)

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3: List three main ways that water is gained by the body and three main ways that water is lost.

(3 marks)

|  |  |
| --- | --- |
| Fluid Gain | Fluid Loss |
|  |  |
|  |  |
|  |  |

4: Where does metabolic water come from?\*

(4 marks)

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5: Where in the nephron does ACTIVE reabsorption of water occur?

(1 mark)

*…………………………………………………………………………………………………………………….*

6: Which hormone is involved in regulating active reabsorption of water?

(1 mark)

*…………………………………………………………………………………………………………………….*

6: Where in the nephron does reabsorption of sodium ions occur?

(1 mark)

*…………………………………………………………………………………………………………………….*

7: Which hormone is involved in regulating reabsorption of sodium ions?

(1 mark)

*…………………………………………………………………………………………………………………….*

8: How does the Na+ move from the tubules to the blood during this process?

(1 mark)

*…………………………………………………………………………………………………………………….*

9: What happens to water as the Na+ is reabsorbed?

(1 mark)

*…………………………………………………………………………………………………………………….*

10: What happens to osmotic pressure of the blood as water concentration decreases?

(2 marks)

*…………………………………………………………………………………………………………………….*

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11: How is osmotic pressure of the blood detected?

(2 marks)

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12: Draw an annotated homeostatic feedback loop to show what occurs when osmotic pressure increases.

(15 marks out of 18 possible marks on key)

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13: Discuss the response of the body when osmotic pressure decreases.

(4 marks)

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14: Genna, Zainab and Ya.n are all marathon runners. Whilst running a marathon on a warm day. Genna does not drink enough water, Yan drinks a large amount of water, and Zainab drinks a large amount of a sports drink with electrolytes. Genna and Yan both collapse and are taken to hospital, and Zainab successfully finishes the marathon.

Using your understandings of body fluid homeostasis, describe in detail why Genna and Yan collapsed but Zainab was successful in completing the marathon.\*

(25 marks)

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15: In addition to aldosterone, the adrenal cortex also produces cortisol. Describe how the production of cortisol occurs in the body\*

(10 marks)

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Go back and mark your work using the marking key provided. What score did you get? /68

*I included enough detail 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.*