**AICE Biology Guided Reading: Homeostasis (J&F Ch 14)***This guided reading is worth 50 points and is due Wednesday, April 11.*

1. What is homeostasis and what are the three main factors controlled for in homeostatic regulation? [2]
2. Answer SAQ 14.1. [2]
3. Define thermoregulation and briefly outline how the body regulates temperature in too cold and too warm conditions. [4]
4. What are the two primary excretions formed by the human body? Where is each formed / removed from the body? [2]
5. What is the purpose of deamination? Where does it occur & what is the end product? [2]
6. Complete the following chart on nitrogenous excretory products on your own paper: [3]

|  |  |  |  |
| --- | --- | --- | --- |
|  | Urea | Creatinine | Uric acid |
| Where is it made? |  |  |  |
| Made from? |  |  |  |
| Where is it used / excreted? |  |  |  |

1. Draw & label a kidney- Include the following structures: renal artery, renal vein, ureter, capsule, cortex, medulla, renal pelvis. [2]
2. What is a nephron? Familiarize yourself with fig. 14.9- all the parts / function of the nephron. Create either a chart or diagram that explains these functions. Include a drawing of the nephron’s structure. [2]
3. Read pages 307-311. Do your best to describe the 2 stage process by which urine is made in the kidney. Include all of the following steps: ultrafiltration, reabsorption in the proximal convoluted tubule, reabsorption in the loop of Henle, distal convoluted tubule, & collecting duct. Include what is being transported and how (active or passive) at each step. [6]
4. Answer SAQs 14.5-14.6 [3]
5. What is osmoregulation? [1]
6. Describe the process by which ADH is made & transported to the kidneys. What (specifically) is the effect of ADH on the kidneys? [2]
7. Describe the negative feedback mechanism by which ADH secretion regulates the water content in the blood. [2]
8. Diagram and describe the pancreas including the following parts: bile duct, pancreatic duct, islet of Langerhans, pancreatic cells, pancreatic veins. (you may need to google) [2]
9. How does the pancreas regulate blood glucose levels and why is this important? [1]
10. Examine Fig 14.21 on page 315. How is insulin in the blood controlled and regulated? [2]
11. Answer SAQs 14.8-14.9 [2]
12. Describe the symptoms and causes of diabetes mellitus. [2]
13. What is urinalysis and how can we use dipsticks and biosensors to test for diabetes? [2]

**Plant Hormonal Control**
14. Describe the hormonal process by which stomata are opened and closed. How does each process work biochemically? [4]
15. Describe the process by which leaves are abscised from plants. [1]