

Excretion ILOs

- 1 Outline the roles of the skin, liver, lungs, large intestine and kidney in excretion and name the metabolic waste(s) associated with each.
2. List and briefly describe the various ways in which water enters and leaves the human body.
3. Compare and contrast the composition of urine and blood plasma
4. Outline the function of the parts of the urinary system
5. List and identify (draw) the major structures of the urinary system
6. Identify (draw) and give the function of the parts of the nephron
- 7 Identify (draw) and give the function of the parts of the circulation within a nephron
- 8 Illustrate how the countercurrent exchange of the nephron is set up
9. Illustrate the section of the nephron showing the steps of urine formation
10. Show how active transport move molecules into or out of the nephron
11. Show how kidneys maintain homeostasis of blood pH
12. Identify (draw) the macroscopic anatomy of a kidney
13. Identify (draw)the juxtaglomerular apparatus
14. Describe the role of aldosterone and explain how it acts to regulate urine composition

15. Show the feedback loop that occurs if you drink salt water
16. State how the hypothalamus, posterior pituitary gland and distal tubule of the nephron are interrelated in regulating water and solute levels of body fluid
17. Show one feedback loop that has all of the homeostatic control of blood volume and discuss what each arrow means in the system described
18. List some of the factors which can change the composition and volume of blood.
19. compare a kidney dialysis machine to a human kidney in terms of action and efficiency
20. compare the action, advantages and disadvantages of hemodialysis , CAPD and kidney transplant
21. Trace the possible pathway taken by a glucose molecule as it enters the kidney through the renal artery How do these routes differ from the route taken by a urea molecule that finds its way into the urine
22. In some abnormal cases the blood may contain so much glucose that when it is filtered into the nephron the tubules are not able to reabsorb all of it and some of the glucose appears in the urine. In these cases the urine volume may be unusually high. Explain
23. In some cases of kidney disease the glomerular membrane becomes very much more permeable than it is normally. The body tissues of patients who have this disease usually swell and become distended with fluid (edema) Can you suggest an explanation (Hint what substance normally excluded from the urine by the filtration process may now find its way through the highly permeable membrane?)
24. A man is lost in the desert without any water supply. What physiological responses described in this chapter will tend to help him survive?