Name: _____________________________________________

Answer 10 questions on a separate piece of paper. Typed is nice!

1. Name the “tubes” and “storage facilities” that filtrate flows through from Bowman's Capsule to the toilet.

2. Name the structures of the vascular system from the aorta to the vena cava as they traverse the kidney.

3. In detail, what is a nephron and what does it do?

4. Unlike the capillary bed of the systemic vascular system, what is truly unique about the capillary bed of the glomerulus?

5. What occurs at the proximal convoluted tubule?

6. What occurs at the Loop of Henle?

7. What occurs at the distal convoluted tubule?

8. How many capillary beds does each nephron have and name it/them?

9. Blood pressure is relatively high in the glomerulus and low in the peritubular capillary bed. Why?

10. What is the Juxtaglomerular Apparatus in terms of its function, structure and tissues?

11. What are the three main processes involved in urine formation?

12. What forces or pressures enhance or inhibit net filtration pressure in the glomerulus?
13. Specifically, how does the nephron increase and decrease the glomerular filtration rate?

14. How are sodium, water and urea reabsorbed and where?

15. What is aquaporin, what’s it’s function, and what controls it’s expression?

16. How does sodium and water behave in the Loop of Henle?

17. What is the advantage to tubular secretion?

18. What’s the big difference between the countercurrent multiplier and countercurrent exchanger?

19. What does urea recycling do?

20. How is urine concentrated?

21. What is tubular reabsorption?

22. What is the driving force of reabsorption by PCT Cells? What does it drive?

23. What is ANP and how does the whole thing work?…starting with the heart

24. How can we measure renal clearance empirically in the hospital? (hint…it was discussed in class and requires some math)

25. What purpose does the scrotum provide sperm and how?

26. Physiologically, how does the penis become erect and what effect does this condition have on the urinary system?

27. Name the various tissues that sperm traverse from their genesis to expulsion?

28. What’s semen made of and what’s it’s purpose?

29. Physiologically, how does Viagra work?

30. How does the nervous system control an erection and ejaculation?

31. What are the steps for spermatogenesis and oogenesis?
32. What are the time periods for spermatogenesis and oogenesis?
33. Where do spermatogenesis and oogenesis occur, specifically and in detail?
34. What hormones regulate the testes and what effect does each have?
35. What are the different types of follicles?
36. Name the layers of the uterine wall and the role each plays in ovulation and menstruation.
37. What happens to an oocyte at puberty?
38. What the heck is a polar body and how’d they get there?
39. What’s the difference between the follicular phase and the luteal phase?
40. What occurs during ovulation?
41. What are the hormonal interactions that occur during the ovulation cycle?
42. What are the phases of the menstrual cycle and what are the hormonal interactions that regulate them?