



Anatomy & Physiology Lesson 6 Exam

Please read these instructions before you begin to answer the questions that follow.

You are welcome to work your answers on this paper examination for your convenience. You will submit your final answers through an uploaded file through our app. When you are satisfied that your answers are correct, use the app to download an instruction file for the corresponding lesson. This will open the lesson, so you are able to add your work for grading. Complete this file upload for grading. Only the answers on the submitted file will be considered for grading.

You have reached the end of Lesson 6 and are ready for your Lesson 6 Examination. After you complete it, log in and submit through the app. Good luck!

Instructions:

Follow the instructions for each question. Show your work in the space provided and write the answer on the line. You will need to show your work on the file submitted to your teacher for grading.

Multiple Choice (worth 2 points each): Enter your selected answer into the blank space provided.

___C___1. What is the basic working unit of the kidneys?

- A. renal cortex
- B. renal medulla
- C. nephron
- D. hilum

___A___2. Which of the following is the name of the lighter-colored, outer part of the kidney?

- A. renal cortex
- B. renal medulla
- C. renal pelvis
- D. renal pyramids

___C___3. All of the following are true EXCEPT

- A. the kidneys are retroperitoneal
- B. the ureter is lined with smooth muscle
- C. the right kidney is slightly higher than the left kidney
- D. blood enters the glomerulus through the afferent arteriole

___B___4. True or False: Cortical nephrons are the only nephrons that produce highly concentrated urine.

- A. True
- B. False

- ___D___ 5. Where do the renal artery, vein, ureter, and nerve connect to the kidney?
- A. renal pelvis
 - B. fibrous capsule
 - C. renal pyramid
 - D. hilum
- ___C___ 6. Which of the following is the correct order of urine formation?
- A. reabsorption, filtration, secretion
 - B. secretion, filtration, reabsorption
 - C. filtration, reabsorption, secretion
 - D. filtration, secretion, reabsorption
- ___B___ 7. Low blood pressure signals the kidneys to produce what hormone?
- A. angiotensinogen
 - B. renin
 - C. aldosterone
 - D. trigone
- ___D___ 8. Which vessel carries blood to the kidney?
- A. renal vein
 - B. abdominal aorta
 - C. glomerular capillaries
 - D. renal artery
- ___A___ 9. The glomerular filtrate consists of water and _____.
- A. solutes
 - B. red blood cells
 - C. white blood cells
 - D. renin
- ___D___ 10. Which of the following substances cannot cross the filtration membrane?
- A. urea
 - B. potassium and sodium
 - C. glucose
 - D. red and white blood cells
- ___B___ 11. The reabsorption of water and dissolved substances occurs mostly in the _____.
- A. distal convoluted tubule
 - B. proximal convoluted tubule
 - C. afferent arterial
 - D. renal corpuscle
- ___C___ 12. All of the following are true of secretion EXCEPT
- A. it requires ATP
 - B. urea is removed from the blood
 - C. it is considered a passive process
 - D. the renal tubule is filled with wastes

- ___D___ 13. What hormone is responsible for increasing reabsorption and producing a concentrated urine?
- A. aldosterone
 - B. atrial natriuretic peptide
 - C. angiotensin
 - D. antidiuretic hormone
- ___B___ 14. True or False: The urinary bladder has two openings.
- A. True
 - B. False
- ___B___ 15. The internal sphincter of the bladder is made of _____ and is there for controlled by the autonomic nervous system.
- A. stretch receptors
 - B. smooth muscle
 - C. skeletal muscle
 - D. connective tissue
- ___A___ 16. Meiosis produces _____ cells that are genetically different from the mother cell.
- A. four haploid
 - B. four diploid
 - C. two haploid
 - D. two diploid
- ___D___ 17. The reproductive organs of adolescents are nonfunctional because _____.
- A. follicle-stimulating hormone levels are low
 - B. luteinizing levels are low
 - C. the sex determining region Y isn't present
 - D. both a and b
- ___A___ 18. Growth of axillary and pubic hair and changes in pelvic width and size are examples of _____.
- A. female secondary sex characteristics
 - B. menstrual bleeding
 - C. male secondary sex characteristics
 - D. gamete formation
- ___A___ 19. All of the following are accessory reproductive organs in the male EXCEPT
- A. external genitals
 - B. prostate
 - C. testis
 - D. seminal glands
- ___B___ 20. Which of the following depicts the correct order of sperm formation?
- A. epididymis, testis, ductus deferens, urethra
 - B. testis, epididymis, ductus deferens, urethra
 - C. testis, ductus deferens, epididymis, urethra
 - D. testis, epididymis, urethra, ductus deferens

- ___C___ 21. A sperm cell is made of a head, midpiece, and _____, which is used to swim up the female reproductive tract.
- A. cilia
 - B. microvilli
 - C. flagellum
 - D. acrosome
- ___A___ 22. True or False: The male urethra is both used as the end of the reproductive tract and the outlet for urine.
- A. True
 - B. False
- ___D___ 23. What is it called when a fertilized egg is implanted in the pelvic cavity or uterine tube?
- A. parametrium pregnancy
 - B. uterine pregnancy
 - C. tubular pregnancy
 - D. ectopic pregnancy
- ___D___ 24. What phase of the ovarian cycle begins with the release of the oocyte?
- A. luteal
 - B. oocytal
 - C. menstrual
 - D. follicular
- ___C___ 25. In which phase of the uterine cycle is the outer layer of the endometrium broken down and passed out of the vagina?
- A. secretory
 - B. proliferative
 - C. menstrual
 - D. follicular
- ___B___ 26. Fertilization typically takes place in the _____.
- A. ovary
 - B. uterine tube
 - C. uterus
 - D. cervical canal
- ___D___ 27. What organ supplies the fetus with oxygen, waste removal, and nourishment?
- A. amniotic cavity
 - B. uterus
 - C. cervix
 - D. placenta
- ___A___ 28. True or False: Breast milk contains antibodies that helps protect the infant while its immune system is maturing.
- A. True
 - B. False

__B__ 29. How long does normal gestation take?

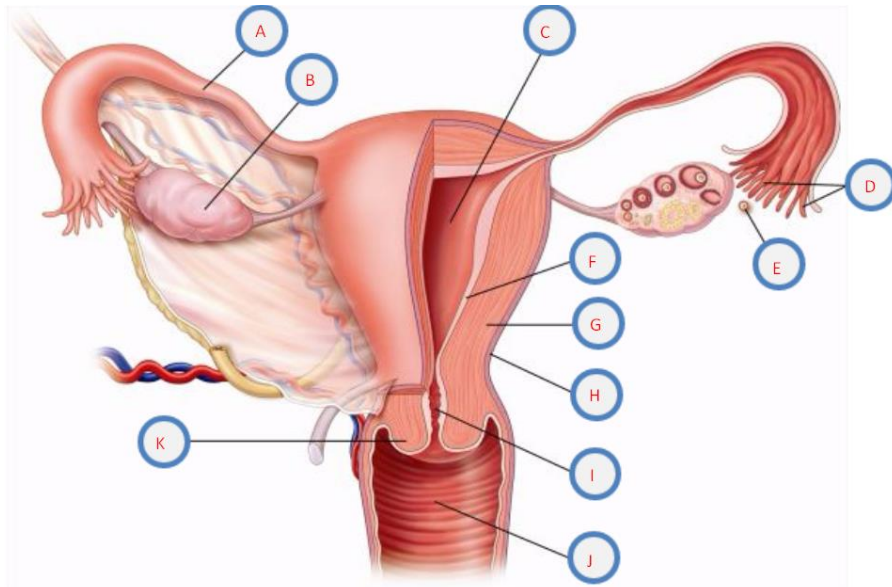
- A. 280 days
- B. 40 weeks
- C. 9 months + 1 week
- D. all of the above

__D__ 30. What enzyme allows the sperm to penetrate and fertilize the oocyte?

- A. progesterone
- B. blastocyst
- C. hCG
- D. acrosomal

Labeling (worth 11 points total)

Use the diagram below to answer question 31.



31. Use the following word bank to match the correct body cavity with the corresponding letter above.

Word Bank:

- | | | | |
|-------------------|----------------------|--------------------|-------------------|
| __B__ ovary | __D__ fimbriae | __A__ uterine tube | __F__ endometrium |
| __C__ lumen | __I__ cervical canal | __G__ myometrium | __J__ vagina |
| __H__ perimetrium | __E__ oocyte | __K__ cervix | |

Matching (worth 9 points, 1 point each)

32. Match the terms in Column I with the descriptions in Column II.

Column I	Column II
<u>e</u> kidney stones	a. inability to become pregnant
<u>i</u> urinary tract infection	b. bacterial infection that can damage the endometrium
<u>g</u> dialysis	c. viral infection that causes blisters or sores
<u>a</u> infertility	d. HPV has been linked as a cause
<u>b</u> gonorrhea	e. crystallized forms found in the urine
<u>h</u> prostate cancer	f. can lead to infertility or ectopic pregnancy
<u>d</u> cervical cancer	g. filtering the blood of wastes using technology
<u>f</u> chlamydia	h. second most common form of cancer in men
<u>c</u> genital herpes	i. bacterial infection of the urethra

Essays (worth 20 points, 10 points each)

33. Compare and contrast the symptoms and causes of diabetes mellitus and diabetes insipidus.

Diabetes Mellitus can be defined as when a human pancreas is unable to produce enough insulin to control the amount of sugar or glucose in the blood. On the other hand, Diabetes insipidus is the dramatic loss of fluid which happens when a human kidney produces excessive urine. The symptoms of these two diseases may be the same but below is a way to differentiate them.

Extreme Thirst: This warning sign occurs in diabetes insipidus because the body senses a lack of Vasopressin and so it demands more liquids because it thinks it needs them. For diabetes mellitus, the excessive dehydration occurs because of excessive glucose levels that need to be expelled from the body. For those with diabetes insipidus, their urine is clear and transparent, while it yellow, pale, and often cloudy for those with diabetes mellitus.

Extreme Fatigue: For diabetes mellitus, excessive exhaustion generally occurs because blood sugar levels are too low or too high. For diabetes insipidus, excessive exhaustion occurs because of an overall lack of hydration. It may also be caused by an imbalance in electrolyte.

Blurry Vision: In diabetes mellitus, this is a common side effect of their being too much sugar levels within the body. With diabetes insipidus, the blurred vision classically occurs when there is a chronic lack of hydration or because of a head injury that became the basis of disease development.

The differences between diabetes mellitus and diabetes insipidus include the following.

For the case of diabetes mellitus, the level of cholesterol in the blood increases and urine concentration is normal. The urine volume is excessive, there is excretion of sugar in the urine and the level of blood sugar is high. It is characterized by insulin deficiency and the type of disorder is pancreatic.

On the other hand, Diabetes insipidus has the following characteristics. The level of cholesterol in the blood is normal and urine concentration is very dilute. The urine volume is enormous, there is no excretion of sugar in the urine and the level of blood sugar is normal. It is characterized by ADH deficiency and the type of disorder is Hypothalamic.

34. Outline the formation of sperm in the male reproduction system and then trace the pathway that sperm takes as it leaves the male, enters the female and ultimately fertilizes the egg. Be sure to include the organs and structures the sperm passes through, how it penetrates the egg and how fertilization is completed.

Sperm develop in the testicles in a process known as spermatogenesis. This happens when a male reaches puberty. He produces millions of sperm cells every day. The sperm cells divide and change until they look like tadpoles with a head and short tail. The head is made up of genetic materials. The sperm relocate into the epididymis, where they complete their growth and development and later to the sperm duct.

When a male is sexually stimulated, the seminal vesicles and prostate gland make the whitish seminal fluid that mixes with sperm to form semen. When he gets sexually excited, the penis becomes erect. Its tissues are filled with blood and its rigidity makes it easier to penetrate the female's vagina during sexual intercourse.

After stimulation, muscles around the reproductive organ contract and semen is forced through the duct system and the urethra in a process called ejaculation. One ejaculation can contain up to 500 million sperm.

Once the semen is ejaculated into a female's vagina, the sperm swim through the cervix and uterus to find and meet the egg in the uterus tube or fallopian tube. When the sperm cell finds the egg, acrosome releases its enzyme which weakens the shell allowing the sperm to penetrate it and reach the egg membrane. A process known as fertilization.

The binding of the sperm to an ovum is called a zygote. A zygote is a single cell, with a complete set of chromosomes, that normally develops into an embryo.