TEST PREP Exam 1

Multiple Choice

1. In terms of reproduction, the Mesoderm will give rise to:
    a. Hypothalimus
    b. Gonads
    c. Intestines
    d. Lungs

2. The primordial germ cells develop from:
    a. Endoderm layer
    b. Mesoderm layer
    c. Ectoderm layer
    d. Gonadal ridge

3. The paramesonephric ducts (Millarian) ducts:
    a. Will form the epididymis
    b. Will form the oviduct
    c. Will secrete estrogen
    d. All of the above

4. Testosterone in the early conceptus:
    a. Is synthesized in the Sertoli cells
    b. Supports the development of paramesonephric ducts
    c. Is synthesized in the Leydig cells
    d. Stimulates the production of Anti-Mullarian hormone

5. The wolffian ducts will form the _____.
    a. Oviduct
    b. Testes
    c. Uterine body
    d. Epididymis

6. Which of the following is NOT a *gonadotropin* from the Anterior Pituitary?
    a. Luteinizing Hormone
    b. Estrogen
    c. Equine Chorionic Gonadotropin (eCG)
    d. Both B and C

7. In the female, FSH (follicle stimulating hormone) is released from the _____, and targets the _____.
    a. Hypothalamus/Thecal cells
    b. Hypothalamus/Granulosa cells
    c. Anterior Pituitary/Thecal cells
    d. Anterior Pituitary/Granulosa cells

8. In the male, LH (luteinizing hormone) is released from the _____, and targets the _____.
    a. Hypothalimus/Leydig cells
    b. Hypothalamus/Sertoli cells
    c. Anterior Pituitary/Leydig cells
    d. Anterior Pituitary/Sertoli cells

9. In the male, FSH (follicle stimulating hormone) is released from the _____, and targets the _____.
    a. Hypothalimus/Leydig cells
    b. Hypothalamus/Sertoli cells
    c. Anterior Pituitary/Leydig cells
    d. Anterior Pituitary/Sertoli cells

10. In the female, LH (luteinizing hormone) is released from the _____, and targets the _____.
    a. Hypothalamus/Thecal cells
    b. Hypothalamus/Granulosa cells
    c. Anterior Pituitary/Thecal cells
    d. Anterior Pituitary/Granulosa cells

11. Where is the estrogen produced in the female?
    a. Theca cells
    b. Anterior Pituitary
    c. Granulosa cells
    d. Sertoli cells

12. Gonadotropin releasing hormone (GnRH) is released from the _____, and targets the _____.
    a. Ovary/Hypothalamus
    b. Hypothalamus/Sertoli cells
    c. Testicle/Leydig cells
    d. Hypothalamus/Anterior Pituitary

13. Where is the Testosterone produced in the male?
    a. Hypothalamus
    b. Leydig cells
    c. Sertoli cells
    d. Theca cells

14. _____ is produced by the CL (corpus luteum) as well as the placenta, and maintains uterine quiescence as well as preventing GnRH release.
    a. Estrogen
    b. Inhibin
    c. Oxytocin
    d. Progesterone

15. Inhibin works to inhibit the release of _____
    a. FSH (Follicle Stimulating Hormone)
    b. LH (Luteinizing Hormone)
    c. Oxytocin
    d. Progesterone

16. What neurohormone signals GnRH to be released?
    a. Progesterone
    b. FSH
    c. LH
    d. Kisspeptin

Matching

___ 1. Mesonephric ducts ___ 2. Endoderm ___ 3. Urogenital sinus ___ 4. Neurohypophysis ___ 5. Ectoderm ___ 6. Paramesonephric ducts ___ 7. Differentiation ___ 8. Adenohypophysis ___ 9. Mesoderm	**A.** The innermost layer of cells in the embryo. Develops into Endocrine system. **B.** Embryonic cavity that will give rise to the bladder, pelvic urethra, vagina, and external genitalia of both the male and female **C.** The outer layer of cells in the embryo. Develops into Nervous system. **D.** Anterior lobe of the pituitary gland. Develops from the roof of the mouth. **E.** These will be retained and form the epididymis and the ductus deferens in the male or will become vestigial in the female **F.** The posterior lobe of the pituitary gland. Develops from the floor of the brain. **G.** The middle germ layer of the embryo. Develops into Reproductive system. **H.** The development of structure and function that is more specialized than the original cell or tissue **I.** These develop into the oviducts, uterus, cervix, and portions of the cranial vagina

Fill out the table

Gland	Hormone	Chemical Class	Principle Function
Ovary		Steroid	
	FSH	glycoprotein	
Hypothalamus		Peptide	
	Oxytocin		Stimulates myometrial contractions for transporting sperm
	Inhibin		Inhibits the release of FSH from anterior pituitary

Free Response

17. What structure/organ secretes GnRH?

18. What structure/organ secretes LH and FSH?

19. What is the target tissue/cell type of LH in the male?

20. What is the function of LH on the target cells of the male?

21. What is the support cell of the female? What is the steroid cell of the female?

22. What hormone is important in the cyclicity of seasonal breeders and is released in response to day length?

23. What is the primary difference between the hypothalamus of the female compared to the male?

24. Name the factors puberty depends on and give an example for two of them.

25. What structure stores oxytocin? What is its function?

26. How does the hypothalamus of a female become “feminized”?

27. How does the hypothalamus of a male become “defeminized”?

28. Explain how LH (glycoprotein hormone) causes a response once it reaches its target tissues in the space below. Be sure to include the type of the second messenger, if any used by this hormone in your response.

29. The main embryological events in the development of the reproductive system are initiated at fertilization. **Explain in detail how an XY embryo sexually differentiates in utero.**