

- **BIOMEDICAL SCIENCE 136**
- **PRACTICE QUIZ FOR SECOND LECTURE EXAM** (ANSWERS ON THE BACK)

**TRUE OR FALSE**

1. Meiosis II occurs to create a secondary spermatocyte from a primary spermatocyte.
2. If two parents were both homozygous recessive for a trait then all of their children would also be homozygous recessive for the same trait.
3. During an anovular cycle, a woman will menstruate, but she will not ovulate.
4. Males can be carriers of sex linked diseases.
5. A woman has fewer primary oocytes in her ovaries at puberty than she did during her own early fetal development.

**MULTIPLE CHOICE**

6. Which of the following cells is haploid?
  - A. oogonia
  - B. primary oocyte
  - C. ootid
  - D. A and B only
  - E. B and C only
7. Which of the following is the correct sequence **in order** of cell transformations that occurs during spermatogenesis?
  - A. spermatid to secondary spermatocyte to primary spermatocyte to spermatogonia
  - B. spermatogonia to primary spermatocyte to secondary spermatocyte to spermatid
  - C. primary spermatocyte to secondary spermatocyte to spermatid to spermatogonia
  - D. spermatogonia to secondary spermatocyte to primary spermatocyte to spermatid
  - E. primary spermatocyte to spermatogonia to secondary spermatocyte to spermatid
8. Which of the following is a duct (tube) that carries both urine and semen in the male?
  - A. vas (ductus) deferens
  - B. epididymis
  - C. urethra
  - D. rete testis
  - E. seminiferous tubules

9. How many chromosomes do **mature spermatids** possess in humans?

- A. 46 duplicated chromosomes
- B. 46 single chromosomes
- C. 23 duplicated chromosomes
- D. 23 single chromosomes
- E. none of the above

10. With regard to polydactyly, **P = polydactylous (having 6 fingers), p = normal (having 5 fingers). Polydactyly is not sex-linked.** What is the probability that two parents who are both heterozygous for the trait will produce a normal 5 fingered child?

- A. 100%
- B. 75%
- C. 50%
- D. 25%
- E. 0%

11. Cystic fibrosis is an inherited recessive condition that causes the secretion of abnormal mucus in the lungs and problems with pancreas function and food absorption. Cystic fibrosis is a single gene recessive disease trait that is **not** sex-linked. **Assume C = the normal and c = cystic fibrosis.** Which of the following genotypes would cause the person to have cystic fibrosis?

- A. Cc
- B. CCC
- C. cc
- D. CC
- E. none of the above

12. Which of the following female reproductive structures is the primary site of sensitivity for sexual arousal?

- A. vagina
- B. mons
- C. labia majora
- D. clitoris
- E. labia minora

**SENTENCE COMPLETION**

13. The (A. interstitial tissue / B. seminiferous tubules) within the testes contain Sertoli cells.

14. A large increase in the release of testosterone from the testes would cause a(n) (A. increase / B. decrease) in the release of LH from the pituitary.

**(over for short answer questions)**

### **SHORT ANSWER**

15. Briefly explain why a man who has had a vasectomy still has normal FSH and inhibin levels in his blood.

16. What steroids are secreted from the ovary during the luteal phase? List the changes that occur in the uterus, cervix and basal body temperature due to these steroids.

### **ANSWERS**

1. FALSE
2. TRUE
3. TRUE
4. FALSE
5. TRUE
6. C
7. B
8. C
9. D
10. D
11. C
12. D
13. B
14. B

15. A vasectomy only blocks sperm from becoming part of the ejaculated semen, it does not affect sperm production. There is a negative feedback loop such that an increase in inhibin levels (due to an increase in sperm production levels) would cause a decrease in FSH. Since sperm production levels are normal then inhibin levels are normal and thus FSH levels are normal.

16. Both estrogen (estradiol) and progesterone are secreted from the ovary during the luteal phase

Effects on the:

Uterus = causes secretions from mucous glands (secretory phase)

Cervix = causes cervical mucous to be thick, viscous and inhospitable to sperm

Basal body temp = progesterone (only) causes a slight  $\frac{1}{2}$  to 1 degree Celsius increase in basal body temperature