HST071: Human Reproductive Biology
Homework 1
Male Reproduction

1. Testosterone is converted to _____ by the enzyme _____, which is inhibited by _____. This drug is used to treat _____.
2. List the following hormones in order of decreasing potency: testosterone, DTH, androstenedione.

3. Testosterone and androstenedione are converted to _____ in _____ tissue by the enzyme _____.
4. Name at least 4 target tissues that androgens act on:

5. Name at least 4 functions of androgens:

6. FSH stimulates _____ cells to produce _____, which inhibits _____ secretion from the _____.
7. LH stimulates _____ cells to produce _____.
8. MIS secreted by _____ cells suppresses development of _____ ducts in males.
9. The blood-testis barrier is created by _____ between Sertoli cells.
10. The middle piece (neck) of sperm is rich in _____. Sperm food supply is _____.
11. The name of the plexus of veins that returns blood from the scrotum and testes is the _____.
12. Erection is under control of the _____nervous system while ejaculation is under the control of the _____ nervous system.
13. An undescended testicle is referred to as being _____. This condition increases the risk of later developing _____. What is the main reason for surgically bringing down an undescended testicle?
14. Sildenaphil directly inhibits
    (A) cyclic GMP
    (B) cyclic AMP
    (C) phosphodiesterase type 5
    (D) PDE3
    (E) PGF2 alpha
15. Sildenaphil is contraindicated in men who are taking
    (A) penicillin
    (B) nitroglycerin
    (C) atenolol
    (D) captopril
    (E) calcium channel blockers

16. A 56 year old man has Peyronie's disease. He has a problem with:
    (A) inability to have an erection
    (B) a bent penis
    (C) a very short penis
    (D) a very long penis
    (E) no penis
17. During development of the male embryo all of the following processes occur EXCEPT
    (A) medullary sex cords develop and become the seminiferous tubules of the testis
    (B) cortical sex cords develop and become the interstitial cells of Leydig
    (C) a dense tunica albuginea develops and covers the testis
    (D) the mesonephric duct develops into the ductus deferens and epididymis
    (E) the paramesonephric duct regresses under the influence of MIS
18. Which of the following factors most clearly rules out an organic cause of male impotence?
    (A) Normal serum thyroxine
    (B) Nocturnal erections
    (C) Normal serum testosterone
    (D) Normal serum prolactin
    (E) Serum gonadotropins
19. Use of anabolic steroids is associated with an increase in all the following characteristics EXCEPT
    (A) spermatogenesis
    (B) libido
    (C) muscle strength
    (D) bone mass
    (E) sebaceous gland secretion

Match the following descriptions with the appropriate disorder.
(A) Complete androgen resistance
(B) 5 alpha-reductase deficiency
(C) Testicular dysgenesis
(D) 17 alpha-hydroxylase deficiency
(E) 3 beta-hydroxysteroid dehydrogenase deficiency

20. A genotypic male (XY) infant with male phenotypic internal reproductive tract (epiddymis, seminal vesicle, vas deferens) and ambiguous genitalia.
21. A genotypic male (XY) infant with female phenotypic external genitalia characterized by a vagina that ends as a blind sac (i.e., no internal reproductive tract).
22. A genotypic male (XY) infant with female phenotypic internal and external reproductive system.
23. A genotypic female (XX) born with female phenotypic internal and external reproductive system that fails to mature at puberty.