This worksheet is intended solely as a support resource to aid your studying. It is not created, reviewed, or endorsed by the professor. The material is based on approaches used by past SI leaders and reflects general patterns observed in exam-style questions. While it is designed to help you practice and strengthen your understanding, it should be used alongside official course materials.

Concept Questions

1. Why does spermatogenesis produce 4 functional gametes, while oogenesis produces 1 functional ovum?
2. Why are primary oocytes arrested before birth and only resume meiosis later?
3. Why does pulsatile GnRH stimulate LH/FSH, but continuous GnRH inhibits them?
4. Why does testosterone inhibit LH but FSH is regulated differently (inhibin)?
5. Why are both cell types necessary for spermatogenesis instead of one doing everything?
6. Why is erection controlled by parasympathetic (NO/cGMP) while ejaculation is sympathetic?
7. Why is LH surge (not FSH) responsible for ovulation?
8. Why does the corpus luteum degenerate without fertilization but persist during pregnancy?
9. Why does fertilization normally occur in the ampulla, not the uterus?
10. Why must sperm penetrate both corona radiata AND zona pellucida?

Practice Questions

1. During spermatogenesis, which stage first becomes haploid?
A. Spermatogonia
B. Primary spermatocyte
C. Secondary spermatocyte
D. Spermatid

2. Which cell type directly supports and nourishes developing sperm?
A. Leydig cells
B. Sertoli cells
C. Germ cells
D. Interstitial cells

3. Continuous GnRH exposure results in:
A. Increased LH and FSH
B. Decreased LH and FSH
C. Increased testosterone only

D. No change

4. Testosterone primarily inhibits:
A. FSH only
B. LH only
C. Both LH and FSH equally
D. GnRH only

5. FSH levels increase when:
A. Testosterone increases
B. Inhibin increases
C. Spermatogenesis decreases
D. LH increases

6. Erection is primarily mediated by:
A. Sympathetic stimulation
B. Parasympathetic NO release
C. Epinephrine release
D. Increased Ca^{2+} influx

7. The second messenger involved in erection is:
A. cAMP
B. IP3
C. cGMP
D. DAG

8. Which structure forms BEFORE birth in females?
A. Secondary oocyte
B. Primary oocyte
C. Mature ovum
D. Corpus luteum

9. What prevents completion of meiosis in primary oocytes before puberty?
A. LH suppression
B. Oocyte maturation inhibitor
C. Low estrogen
D. High progesterone

10. Ovulation occurs approximately:
A. At LH peak

B. 12–24 hours after LH surge
C. Before FSH release
D. During progesterone peak

11. The corpus luteum secretes:
A. Only estrogen
B. Only progesterone
C. Progesterone and estrogen
D. hCG

12. Without fertilization, the corpus luteum becomes:
A. Corpus callosum
B. Corpus albicans
C. Corpus cavernosum
D. Follicle

13. Fertilization most commonly occurs in the:
A. Uterus
B. Cervix
C. Ampulla
D. Ovary

14. Which enzyme helps sperm penetrate the zona pellucida?
A. Trypsin
B. Acrosin
C. Pepsin
D. Lipase

15. hCG maintains pregnancy by:
A. Stimulating estrogen only
B. Inhibiting LH
C. Maintaining corpus luteum
D. Increasing FSH