

Name: answerto

Date: _____

Review: Menstrual Cycle

Use the image as well as textbook pages 143-148 to help you answer the following questions:

1. How long does the menstrual cycle in the illustration last? 28 days

2. On a 28 day cycle, which day does ovulation occur? 14

3. If the cycle were to last 33 days, when would ovulation occur? day 19

4. a) What is the follicle's function? (ovocyte)

b) What is estrogen's function? thicken endometrium

c) What is the relationship between the size of the follicle and the amount of estrogen? direct

d) What causes the follicle to grow? FSH

5. What is the relationship between the thickness of the uterine lining and the amount of estrogen? about direct before ovulation
no relationship otherwise

6. a) What is FSH's function? mature follicle

b) What causes FSH to be secreted? estrogen

c) Why does FSH production drop once the follicle bursts? no more follicle is needed if has become the corpus luteum -> more of pregnancy

7. What is LH's function? ovulation

8. What gland secretes FSH and LH? pituitary

9. a) What is progesterone's function? preparation for pregnancy

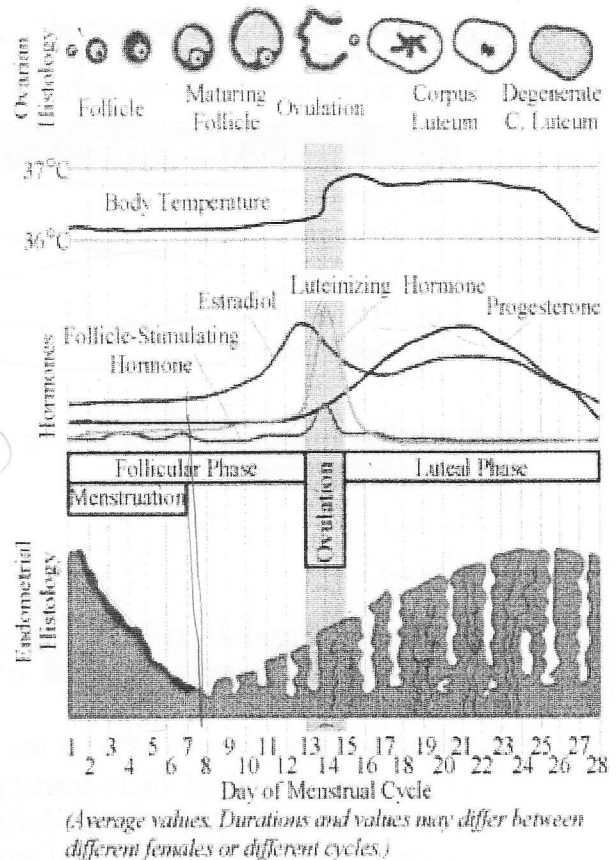
b) What causes progesterone to be secreted? corpus luteum

10. Why does ovulation occur? LH surge/increase/spike

11. Once ovulation occurs what will occur 14 days later? menstruation

12. a) During post-ovulation, what hormone is responsible for the thickening of the uterine lining? progesterone

b) What hormone was responsible during pre-ovulation? estrogen



13. a) What is the corpus luteum? healed ovarian follicle
 b) What is its function? progesterone production = prepare for pregnancy
 c) Why does the corpus luteum deteriorate? no fertilized egg
 14. Why does a female get her period? ↓ progesterone, need new ~~endometrium~~ endometrium
 15. Match each hormone to its secretor.

Hormone	Secretor
a) FSH	1. Pituitary gland
b) Estrogen	2. Corpus luteum
c) LH	3. Testicle
d) Progesterone	4. Ovarian follicle
e) Testosterone	5. Pituitary gland

16. Circle the answer corresponding to the number of ova produced from a single oocyte during oogenesis.

a) 1

b) 2

c) 4

d) 8

4 haploid cells produced but only 1 become an egg

17. a) When is oogenesis started? As a fetus
 b) When is oogenesis completed so that a secondary oocyte is produced? puberty / adolescence
 18. What hormone is responsible for the following phenomena:
 a) Maturation of the follicle during preovulatory phase: FSH
 b) Thickening of uterine lining during menstrual cycle: estrogen & progesterone
 c) Ovulation, or the rupturing of the follicle causing release of the egg: LH

19. True or false:

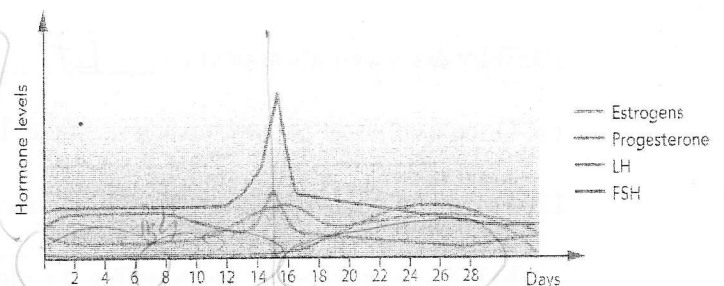
- a) At birth, girls contain all the oocytes they will ever have T
 b) Oogenesis starts at puberty F menopause
 c) Females can produce eggs until they die F remain
 d) If a female gets pregnant, progesterone levels decrease F
 e) LH stimulates the maturation of follicles F FSH stimulates

20. The illustration below shows variations in hormone levels in the blood during the ovarian cycle.

- a) Circle the day that ovulation will occur in blue.

How do you know ovulation occurs on this date? LH spike

- b) Circle the days of the menstrual phase in red. 1-5
 c) Circle the proliferation phase in yellow. 6-14
 d) Circle the secretory phase in green. 15-28



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Review: Puberty, Male and Female Reproductive system & Reproduction

1. Define the following words associated to **Puberty**:

- a) Puberty: changes that the body undergoes during adolescence to prepare for reproduction
- b) Hormones: chemical secreted by glands transported by blood to 1 or + organs
- c) Glands: organ that secretes one or + hormones

2. Several changes take place during puberty. Give of few examples of:

- a) anatomical changes: hair, pelvic widens (F), larynx enlarges (M)
- b) psychological changes: physical attraction, need for autonomy
- c) Physiological changes: menstrual cycle (F), testicle maturing (M)

3. When does puberty take place in humans? adolescence

4. Name the glands that produce the following hormones:

- a) FSH and LH pituitary
- b) Testosterone in males testicles
- c) Estrogen and progesterone in females ovaries

5. Match the letters with the possible choices. The choices can be used more than once.

estrogen, progesterone, FSH, LH, pituitary gland, testosterone, testicles and ovaries

- a- Glands that both males and female have: _____
- b- Hormones that both male and female have: FSH & LH
- c- Hormone that only males have: testosterone
- d- Hormones that only females have: estrogen & progesterone
- e- Gland that only males have: testicles
- f- Gland that only females have: ovaries

6. What are the female primary sexual characteristics? menstrual cycle & genital organs

7. What are the male primary sexual characteristic? testicles maturing & lower maturing

8. Give 3 secondary characteristics for females silhouette changes, pelvis widens, sense of responsibility to reproduce

9. Give 3 secondary sexual characteristics for males skeletal & muscle growth, larynx enlarges, general hairiness increases

10. Define the following words associated to the **Male Reproductive system**:

- a) Erection: increase in V + rigidity of penis
- b) Ejaculation: expulsion of semen through urethra
- c) Pre ejaculation: semen that comes out after erection but before ejaculation = can contain sperm !!

11. Explain how an erection occurs: _____

blood flows to spongy tissue in penis

12. What is the process whereby sperm are manufactured in the testes? spermatogenesis

13. Explain if a penis can ejaculate without being erect: _____

no = need an erection for muscle contraction for ejaculation

14. Why are males able to father children in their 70's? _____

men can produce sperm their whole lives

15. Place the following events in chronological order:

- 5 a) Sperm pass through the urethra
- 2 b) Due to stimulation, the corpora cavernosum and spongiosum fill with blood
- 3 c) The penis becomes erect
- 1 d) Spermatogenesis results in the production of sperm
- 4 e) Sperm pass through the ejaculatory ducts
- 6 f) Sperm is expelled

D - B - C - E - A - F

16. Define the following words associated to the **Female Reproductive system**:

- a) Menstrual cycle: changes in endometrium
- b) Ovum: mature egg
- c) Oocyte: immature egg
- d) Oogenesis: production + maturation of eggs
- e) Ovulation: release of egg from ovary to fallopian tube
- f) Follicle: cellular protecting oocyte
- g) Corpus luteum: healed ovarian follicle
- h) Endometrium: uterine lining

17. Match the word with its function.

- | | |
|---------------------------|---|
| a) Follicle <u>E</u> | A) Causes ovulation <u>LH</u> |
| b) LH <u>A</u> | B) Causes endometrium to thicken <u>estrogen + progesterone</u> |
| c) Progesterone <u>B</u> | C) Causes follicle to develop <u>estrogen FSH + estrogen</u> |
| d) FSH <u>C</u> | D) Secretes progesterone <u>corpus luteum</u> |
| e) Corpus luteum <u>D</u> | E) Secretes estrogen <u>follicle</u> |
| f) Estrogen <u>F</u> | F) Causes LH to be secreted <u>estrogen</u> |

18. Match each event in the ovarian cycle by drawing a line to the corresponding event in the menstrual cycle:

Event in the ovarian cycle	Event in the menstrual cycle
The ovarian follicle matures *	• Menstruation is about to begin
The corpus luteum disintegrates *	• Menstruation ends and the endometrium begins to thicken
The ovarian follicle is transformed into the corpus luteum *	• The endometrium thickens

19. Explain what happens during the following days of the menstrual cycle and ovarian cycle.

Menstrual Cycle	
1-5	shedding of endometrium (menstrual phase)
6-14	thickening of " (secretory ")
15-28	" " (proliferation ")
Ovarian Cycle	
1-13	maturation of follicle
14	ovulation
11-15	presence of corpus luteum

20. Place the following events in chronological order:

- 2 A. Ovarian follicle ruptures
- 1 B. Ovarian follicle matures
- 3 C. Ovum is expelled
- 5 D. Progesterone is secreted
- 4 E. Follicle changes into corpus luteum

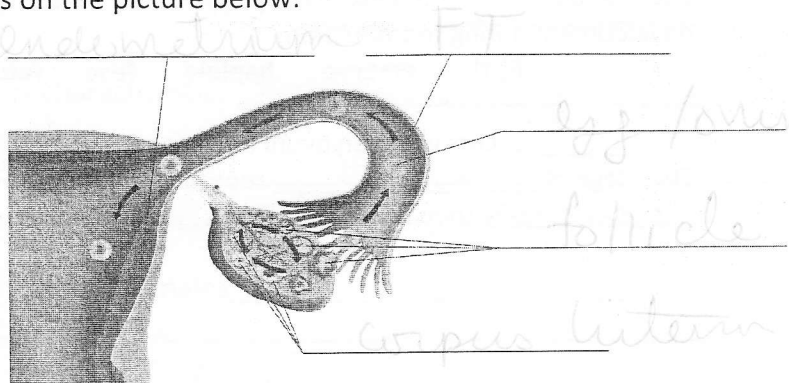
B - A - C - E - D

21. Why does a female get her period? to shed the uterine lining

22. If the ovum only lives 12-24 hours, why is a female fertile for 72 hours? because sperm can live up to 72 hrs

23. Identify the following structures on the picture below:

- fallopian tube
- endometrium
- ovum
- corpus luteum
- follicle



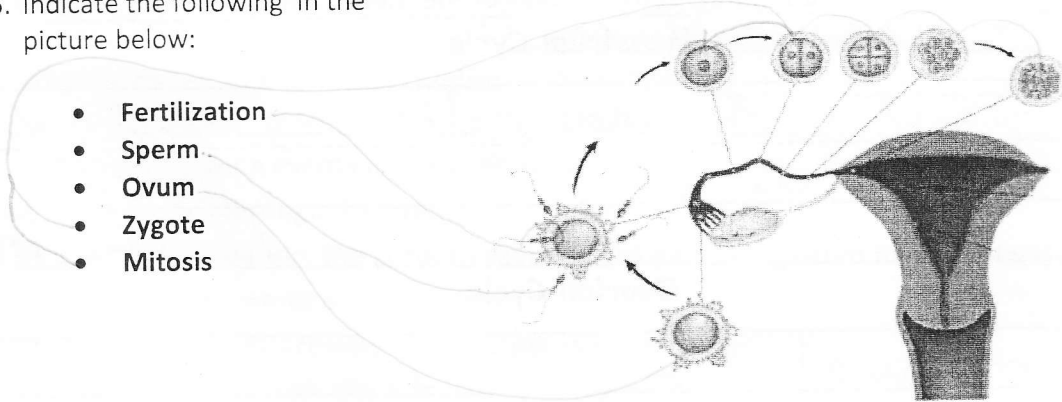
Reproduction

24. Fill in the blank

Sperm is produced in the testicles. The testicles are glands which secrete the hormone testosterone. This hormone causes primary & secondary sexual characteristics. The gametes are sperm cells. They each have 23 chromosomes which make them haploid (n). When the sperm meets the ovum a zygote is produced. A zygote has 46 chromosomes which makes it diploid (2n). Once the zygote is produced, the cell will continue the process of mitosis for the next 9 months.

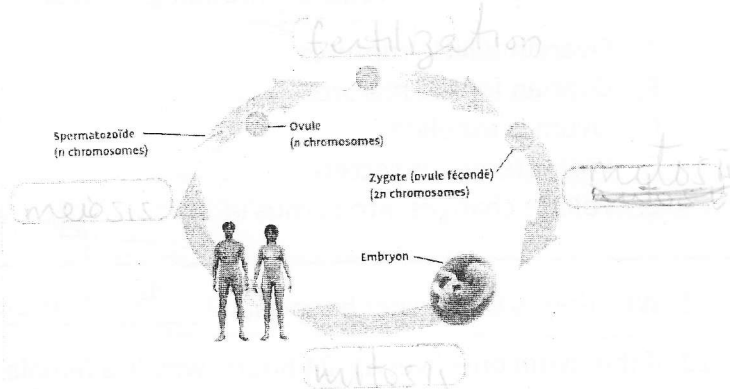
25. Indicate the following in the picture below:

- Fertilization
- Sperm
- Ovum
- Zygote
- Mitosis



26. Label the diagram below using the following word bank:

- Fertilization
- Meiosis
- Mitosis (2x)



27. Use the following word bank to complete the sentences of the text about one of the stages of development during reproduction:

Birth embryo haploid fuse fetus fertilization sexual

Fertilization occurs when an ovum and sperm, two haploid cells, meet and fuse. This stage of sexual reproduction produces a zygote that develops into an embryo, then a fetus which will grow into a until it is a birth.