

Reproduction Review

1. A diploid cell has _____ the number of chromosomes as a haploid cell.
 - (A) one-fourth
 - (B) half
 - (C) *twice*
 - (D) four times

2. Mitosis produces
 - (A) *two identical cells with paired chromosomes.*
 - (B) two non-identical cells with paired chromosomes.
 - (C) four identical cells with single chromosomes.
 - (D) four non-identical cells with single chromosomes.

3. The process by which a unicellular organism divides by mitosis into two equal halves is called
 - (A) sporulation.
 - (B) vegetative propagation.
 - (C) regeneration.
 - (D) *binary fission.*

4. Meiosis forms
 - (A) identical cells with diploid chromosomes.
 - (B) *non-identical cells with haploid chromosomes.*
 - (C) identical cells with haploid chromosomes.
 - (D) non-identical cells with diploid chromosomes.

5. Which of the following statements applies **only** to mitosis?
 - (A) It is used for gamete formation.
 - (B) It is the main replication method for sexual reproduction.
 - (C) It produces haploid cells.
 - (D) *It produces diploid cells.*

6. Which form of reproduction is thought to be best in a stable environment?
- (A) **asexual**
 - (B) sexual
 - (C) budding
 - (D) parthenogenesis
7. Which form of reproduction can result from damage to the original animal?
- (A) asexual
 - (B) **fragmentation**
 - (C) budding
 - (D) parthenogenesis
8. Which form of reproduction is useful to an animal with little mobility that reproduces sexually?
- (A) fission
 - (B) **budding**
 - (C) parthenogenesis
 - (D) hermaphroditism
9. Genetically unique individuals are produced through _____.
- (A) **sexual reproduction**
 - (B) parthenogenesis
 - (C) budding
 - (D) fragmentation
10. Part of the stem of a plant is attached to a different root stock. This method of asexual reproduction is called
- (A) budding.
 - (B) layering.
 - (C) **grafting.**
 - (D) fragmentation.

11. Which of the following hormones is released from the anterior pituitary?
- (A) testosterone
 - (B) estrogen
 - (C) progesterone
 - (D) *follicle stimulating hormone (FSH)*
12. Testosterone stimulates the production of
- (A) eggs.
 - (B) *sperm.*
 - (C) estrogen.
 - (D) human growth hormone.
13. Two of the hormones that regulate a female's ovarian and menstrual cycle are
- (A) testosterone and estrogen.
 - (B) *estrogen and progesterone.*
 - (C) testosterone and FSH.
 - (D) progesterone and testosterone.

14. Place the following stages of mitosis in the correct order.

Anaphase



Cytokinesis



Interphase



Metaphase



Prophase



Telophase



15. Which cells undergo mitosis?

Body cells (somatic cells)

16. Which cells undergo meiosis?

Gametes (germ cells)

17. Define the following terms.

(a) haploid cell

Half the number of chromosomes

(b) diploid cell

The full number of chromosomes

18. Which cells in a living thing are haploid?

Gametes (germ cells)

19. Which cells in a living thing are diploid?

Body cells (somatic cells)

20. What are homologous chromosomes?

Matched set of chromosomes

21. Compare mitosis and meiosis.

Mitosis	Meiosis
<i>one nuclear division that results in two new cells</i>	<i>two nuclear divisions that result in four new cells</i>
<i>nuclei are genetically identical to the original</i>	<i>nuclei are never genetically identical to the original</i>
<i>nuclei contain the same number of sets of chromosomes as the original</i>	<i>nuclei contain one chromosome set only (half the number of the original cell)</i>

22. Briefly explain of each of the following types of asexual reproduction.

(a) Budding

Offspring grows out of the body of the parent, then breaks off into a new individual.

(b) Vegetative propagation

A plant growing a new shoot which is capable of becoming a whole new organism.

(c) Fragmentation (regeneration)

A parent organism is split into multiple parts, each of which grows to become a complete, independent offspring organism.

(d) Spores

Structures grown as part of an organism's life cycle and designed for separation from the organism.

23. Briefly explain each of the following artificial methods of asexual reproduction.

(a) Grafting

Part of the stem of the desirable plant is attached to a rooted plant.

(b) Cuttings

A stem attached to the plant is bent and covered with soil

(c) Layering

A portion of the stem containing nodes and internodes is placed in moist soil and allowed to root.

24. Give two advantages and disadvantages of asexual reproduction.

Advantages	Disadvantages
<p><i>Rapid population growth</i></p> <p><i>No mate is needed to reproduce</i></p> <p><i>Lower resource investment</i></p> <p><i>Positive genetic influences are guaranteed to be passed to the next generation</i></p>	<p><i>Lack of diversity</i></p> <p><i>Negative mutations linger longer</i></p> <p><i>Pest resistance is minimal</i></p>

25. Give two advantages and disadvantages of sexual reproduction.

Advantages	Disadvantages
<p><i>Produces genetic variation in the offspring.</i></p> <p><i>Species can adapt to new environment.</i></p> <p><i>A disease is less likely to affect all the individuals in a population.</i></p>	<p><i>Reproduction cannot occur until and unless gametes from both parents fuse together.</i></p> <p><i>Only half of the population are capable of gestation.</i></p> <p><i>The time taken to produce an offspring by sexual reproduction is very long.</i></p>

26. Label the following diagrams of the human reproductive system.

HUMAN REPRODUCTIVE SYSTEM

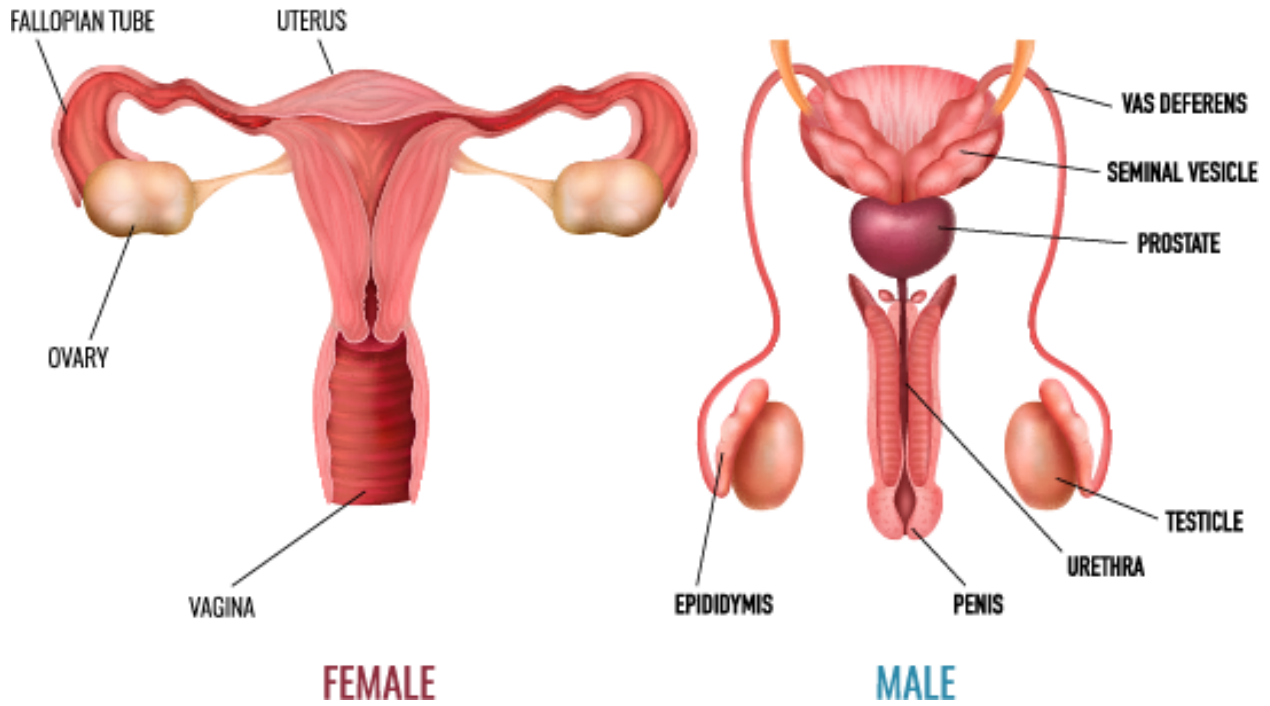


Figure 1- Human reproductive system
 Credit: macrovector (Adobe Stock Photo)

epididymis	penis	testicle	vagina
fallopian tube	prostate	urethra	vas deferens
ovary	seminal vesicle	uterus	

27. Match the parts of the female and male reproductive systems with the appropriate function.

<u>Part</u>	<u>Function</u>
A. epididymus	<u>B</u> connect ovaries to the uterus
B. fallopian tubes	<u>C</u> produce eggs and secrete estrogen
C. ovaries	<u>F</u> produce sperm and secrete testosterone
D. penis	<u>H</u> passageway for a baby to leave the mother's body
E. prostate gland	<u>E</u> secrete substances that become part of semen
F. testes	<u>D</u> path for sperm to leave body through the urethra
G. uterus	<u>A</u> store sperm until they leave the body
H. vagina	<u>I</u> transport sperm from the epididymis to the urethra
I. vas defrens	<u>G</u> where a fetus grows and develops until birth

28. Fill in the blanks with words from the word bank.

The male sperm cell and the female egg fuse together to produce a zygote that travels down the fallopian tube to the uterus. It grows as it travels and becomes a blastocyst. The blastocyst embeds in the lining of the uterus forming an embryo. The embryo begins to grow and become more complex. After about eight weeks, it has developed specialized cells and most organs. At this stage it is now referred to as a fetus.

egg	embryo	fetus	sperm	uterus	zygote
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