

EOT Bio Term 3

Exams 2023/2024



<https://t.me/Advvv9>

Name: _____

Class: _____

Division: _____

Q1.	Sperm is produced in the _____.
a.	bladder
b.	scortum
c.	testes
d.	ovaries

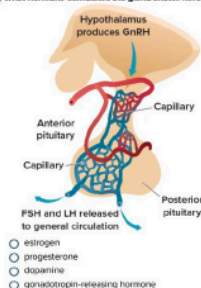
1) Which is a result of the hormone testosterone?

- ☐ female pregnancy
- ☐ female menstrual cycle
- ☐ male sperm production
- ☐ male temperature control

Correct Answer

male sperm production

16) What hormone stimulates the gland shown here, in order to regulate testosterone?



- ☐ estrogen
- ☐ progesterone
- ☐ dopamine
- ☐ gonadotropin-releasing hormone

Correct Answer

gonadotropin-releasing hormone

4) Both semen and urine are carried outside the body through a tube called _____.

Correct Answer

Blank 1: urethra

Which hormones secreted by the anterior pituitary gland regulate the levels of testosterone in males and estrogen in females?

- A. follicle-stimulating hormone (FSH)
- B. gonadotropin-releasing hormone (GnRH)
- C. luteinizing hormone (LH)
- ☒ D. Both A and C

Which hormone influences the development of male secondary sex characteristics at puberty?

- A. follicle-stimulating hormone (FSH)
- B. gonadotropin-releasing hormone (GnRH)
- C. luteinizing hormone (LH)
- ☒ D. testosterone

3. Which two steroid hormones are produced by the ovaries?



testosterone and FSH



estrogen and LH

☒ B

estrogen and progesterone

CORRECT



progesterone and FSH

The two meiotic divisions of egg production yield how many eggs?

- ☒ A. one
- B. two
- C. four
- D. six

17) What results from the first meiotic division of the oocyte?

- ☐ sperm formation
- ☐ ovulation
- ☐ development of a zygote
- ☐ development of a polar body

Correct Answer

development of a polar body

Q14.

Reproductive cells, which pass on genetic traits from the parents to the child, are produced by the process of _____.

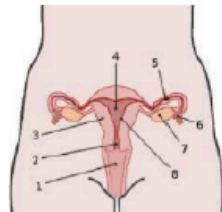
- a. mitosis
- ☒ b. meiosis
- c. cytokinesis
- d. cell cycle

Where does fertilization occur?

- A. in the ovary
- B. in the oviduct**
- C. in the uterus
- D. in the cervix

Q5.

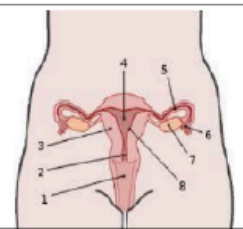
Identify the structure labelled number 1.



- a. cervix
- b. vagina**
- c. fallopian tube
- d. ovary

Q4.

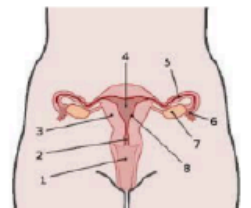
Identify the structure labelled number 2.



- a. cervix**
- b. uterus
- c. fallopian tube
- d. ovary

Q3.

Identify the structure labelled number 5.

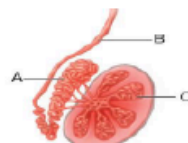


- a. cervix
- b. uterus
- c. fallopian tube**
- d. ovary

1. What would happen if the testes were located inside the body cavity?

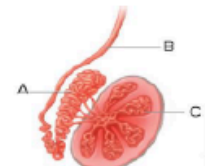
- A** Sperm would not be produced because it is too warm inside the body. **CORRECT**
- ~~B~~ Testosterone levels would increase because of the warm temperature.
- ~~C~~ The seminal vesicles would no longer be needed.
- ~~D~~ Hormones from the testes would have difficulty entering the bloodstream.

5. What is the function of the structure labeled A in the illustration?



- A** sperm cell storage and maturation **CORRECT**
- ~~B~~ secretion of sugar
- ~~C~~ sperm cell production
- ~~D~~ production of FSH

2. What occurs in the structure labeled C?



- ~~A~~ sperm cell storage and maturation
- ~~B~~ secretion of sugar
- B** sperm cell production **CORRECT**
- ~~C~~ production of FSH

What condition is necessary in order for the seminiferous tubules in the testes to produce sperm cells?

- A. a slightly acidic environment
- B. a temperature lower than 37° C**
- C. nutritive fluids from the seminal vesicles
- D. the release of gonadotropin-releasing hormone (GnRH)

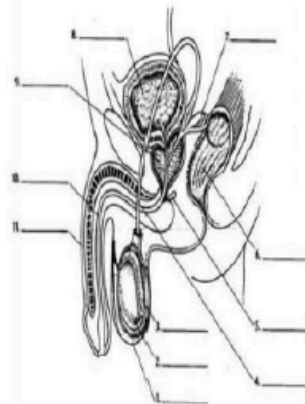
Q13. Why is the scrotum held outside the body?

- a. to keep the testis cool**
- b. to keep the testis warm
- c. for protection
- d. all of the above

Q9.

Which part of the male reproductive system is labelled number 4?

Reproductive System of Human Male

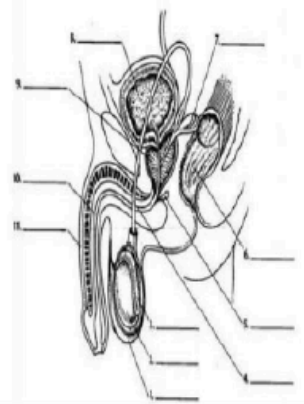


- a. penis
- b. sperm duct
- c. urethra
- d. scrotum

Q10.

Which part of the male reproductive system is labelled number 1?

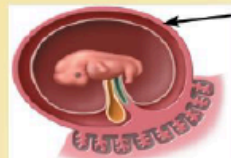
Reproductive System of Human Male



- a. penis
- b. sperm duct
- c. urethra
- d. scrotum

What structure is indicated in the image?

- A. allantois
- B. amnion
- C. chorion
- D. embryo



What substances *cannot* pass through the placenta between the mother and fetus?

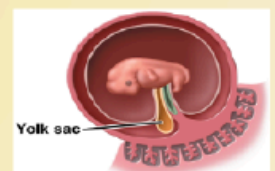
- A. alcohol and drugs
- B. blood cells and plasma
- C. HIV and other viruses
- D. metabolic waste products

What is the thin tissue layer that forms a fluid-filled sac around the developing embryo?

- A. amnion
- B. allantois
- C. chorion
- D. yolk sac

Describe the function of the yolk sac.

- A. cushions the embryo
- B. nourishes the embryo
- C. forms the placenta
- D. forms red blood cells



4. Why is the human yolk sac shown in the illustration smaller than that of the chick?



The yolk in humans is converted into muscle.

The yolk sac in chicks keeps the embryo warm.

C Developing humans get their nourishment from the placenta. **CORRECT**

The yolk sac serves no purpose for a developing human.

What do the inner and outer surfaces of the placenta consist of?

- ☐ A) amniotic tissue and corpus luteum
- ☐ B) chorion and uterine tissue
- ☐ C) amniotic tissue and blastocyst
- ☐ D) corpus luteum and chorion

Correct Answer

B) chorion and uterine tissue

What are the four extraembryonic membranes in fetal development?

- ☐ A) acrosome, placenta, plasma membrane, morula
- ☐ B) placenta, morula, blastocyst, yolk sac
- ☐ C) amnion, chorion, yolk sac, allantois
- ☐ D) amnion, yolk sac, acrosome, morula

Correct Answer

C) amnion, chorion, yolk sac, allantois

Which occurs in plant cells but not animal cells during the cell cycle?

- A. formation of a cell plate
- B. formation of microtubules
- ☒ C. formation of a cleavage furrow at the equator of the cell
- D. movement of chromosomes to the poles of the cell

Which diagram shows anaphase?

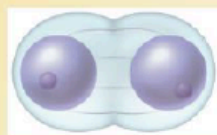


What happens in the cell during cytokinesis?

- A. The cell grows and carries out normal functions.
- B. The cell copies its DNA and forms chromosomes.
- C. The cell's nucleus and nuclear material divide.
- ☒ D. The cell's cytoplasm divides.

This cell has completed what stage of mitosis?

- A. anaphase
- B. interphase
- C. metaphase
- ☒ D. telophase



In what stage of the cell cycle does the cell's replicated genetic material separate?

- A. cytokinesis
- B. interphase
- ☒ C. mitosis
- D. prophase

During what phase do the sister chromatids line up in the middle of the cell?

- A. interphase
- ☒ B. metaphase
- C. anaphase
- D. telophase

In what stage of meiosis does genetic variation occur?

- ☐ A) Prophase I
- ☐ B) Prophase II
- ☐ C) Metaphase I
- ☐ D) Metaphase II

Correct Answer

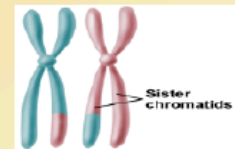
A) Prophase I

How does the number of chromosomes in gametes compare with the number of chromosomes in body cells?

- A. Gametes have 1/4 the number of chromosomes.
- ☒ B. Gametes have 1/2 the number of chromosomes.
- C. Gametes have the same number of chromosomes.
- D. Gametes have twice as many chromosomes.

Before meiosis I, the sister chromatids of this chromosome were identical. What process caused a change in a section of one chromatid?

- A. DNA replication
- ☒ B. crossing over
- C. synapsis
- D. telophase

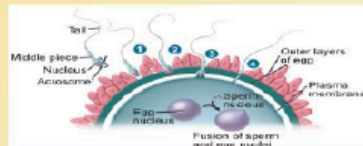


Compared to egg cells formed during meiosis, daughter cells formed during mitosis are

- genetically different, while eggs are genetically identical.
- genetically different, just as egg cells are.
- genetically identical, just as egg cells are.
- genetically identical, while egg cells are genetically different.

What term is used to describe a fertilized egg?

- A. blastocyst
- B. oocyte
- C. polar body
- ☒ D. zygote



In order for sperm cells to enter a female's reproductive system during intercourse, there must be a strong ejaculation of semen.

- A. True
- ☒ B. False

Why are several hundred sperm cells needed for the fertilization of an egg?

- A. They carry hormones to the egg.
- B. They contribute DNA to the egg.
- C. They help each other swim to the egg.
- ☒ D. They weaken the egg's plasma membrane.

Q7.	A _____ is formed when fertilization occurs.
a.	embryo
b.	zygote
c.	fetus
d.	sperm

What structure is indicated in the image?

- A. allantois
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- ☒ C. chorion
- D. embryo



What substances *cannot* pass through the placenta between the mother and fetus?

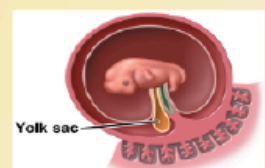
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- ☒ D. forms red blood cells



Q14.	When it occurs at the proper time, programmed cell death (apoptosis)
a.	will disrupt homeostasis
b.	may cause defective genetic info to be passed to the next generation of cells
<input checked="" type="radio"/> c.	is an important regulatory process that maintains the health of a multicellular organism
d.	can contribute to the development of cancer

Q11.	Which phrase best describes a common characteristic of all cancers?
a.	absence of cyclins
b.	damaged DNA
<input checked="" type="radio"/> c.	uncontrolled cell growth
d.	inherited from parents

Q13.	Which of these is a risk factor for developing cancer? CHECK ALL THAT APPLY
<input checked="" type="checkbox"/> a.	growing older
<input checked="" type="checkbox"/> b.	genetic inheritance
<input checked="" type="checkbox"/> c.	exposure to carcinogens (toxins that can damage DNA)
<input checked="" type="checkbox"/> d.	smoking

Which is <i>not</i> a condition that can result in cancer?
<input checked="" type="radio"/> A. a failure in the control mechanisms that regulate the cell cycle
B. a failure in the repair systems that fix changes or damage to DNA
<input checked="" type="radio"/> C. a failure of the spindle fibers to move chromosomes during mitosis
D. mutations or changes in segments of DNA that control protein production

What is the term for the programmed death of cells that are damaged beyond repair or have harmful changes in their DNA?

- ☒ A. apoptosis
- ☐ B. carcinogens
- ☐ C. cytokinesis
- ☐ D. mitosis

Which of these cancer-causing substances or agents is impossible to avoid completely?

- ☐ A. chemicals such as asbestos
- ☐ B. food and drinks that the FDA warns may contain carcinogens
- ☐ C. tobacco and second-hand smoke
- ☒ D. ultraviolet radiation from the Sun

What term is used to describe programmed cell death?

- ☒ A. apoptosis
- ☐ B. anaphase
- ☐ C. necrosis
- ☐ D. cyclins

3. Which is produced by the placenta?

☒ human chorionic gonadotropin

☒ oxytocin

☒ estrogen and progesterone

☒ endometrial birth hormone

CORRECT

What prevents the menstrual cycle from continuing once an egg has been fertilized?

- ☐ A. Progesterone levels remain high.
- ☐ B. Estrogen levels decrease.
- ☐ C. The corpus luteum degenerates.
- ☒ D. Blood supply to the endometrium decreases.

Q2.	A fertilized egg develops in the _____.
a.	cervix
b.	uterus
c.	vagina
d.	ovary

Q15.	Determine the stage of development from the image on the right.
a.	4 weeks
b.	5-6 weeks
c.	7-8 weeks
d.	9-10 weeks



1. Which is a reason why cells remain small?

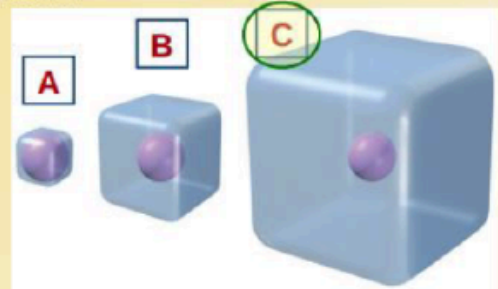
- ☒ Large cells have difficulty diffusing nutrients rapidly enough.
- ☒ As cells grow, their ratio of surface area to volume decreases.
- ☒ Transportation of wastes becomes a problem for large cells.
- ☐ All of the above.

CORRECT

Which can more efficiently supply nutrients and expel waste products?

- ☐ A. larger cells
- ☒ B. smaller cells
- ☐ C. cells with lower surface area to volume ratio
- ☐ D. cells shaped like a cube

Which cell has the lowest ratio of surface area to volume?



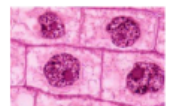
2. Which describes the activities of a cell that include cellular growth and cell division?

- ☒ A. cell cycle
- ☒ B. mitosis
- ☒ C. chromatin
- ☒ D. cytoplasm

CORRECT

Q9.

Name the phase that all of these cells are in.
Hint: Cells spend most of their time in this phase preparing to divide.



- ☐ a. prophase
- ☐ b. anaphase
- ☒ c. interphase
- ☐ d. metaphase

Which of the following stages of interphase shows the cell growing, carrying out normal cell functions, and preparing to replicate DNA?

- ☐ A) Gap 1 (G₁)
- ☒ B) Synthesis (S)
- ☐ C) Gap 2 (G₂)
- ☐ D) Cytokinesis

Correct Answer

A) Gap 1 (G₁)

Q5.

In the S stage of interphase _____

- ☐ a. the cell grows
- ☐ b. the nucleus divides
- ☐ c. the cell membrane divides
- ☒ d. the DNA is replicated

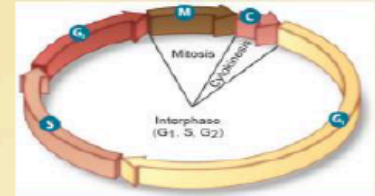
Q12.	In which stage of the cell cycle are cells most susceptible (likely to experience) to mutations?
a.	G1
b.	S
c.	G2
d.	G0

Which is *not* a phase of the cell cycle?

- A. cytokinesis
- B. interphase
- C. apoptosis**
- D. mitosis


At what stage of interphase does the cell take inventory and make sure it is ready for the division of its nucleus?

- A. G₁
- B. S
- C. G₂**
- D. M



At what stage does a cell spend most of its life?

- A. cytokinesis
- B. interphase**
- C. mitosis
- D. synthesis

Q6.	What is the image below?
	
a.	Chromosome
b.	Chromatid
c.	Centromere
d.	Centriole

Chromatin fiber is made up of nucleosomes, which are made up of ___ wrapped around beadlike proteins called ___.





- ☐ A) DNA; histones
- ☐ B) DNA; chromosomes
- ☐ C) histones; DNA
- ☐ D) histones; chromosomes

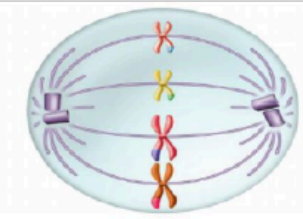
Correct Answer

A) DNA; histones

Q3.	Where does a cell contain its genetic material?
a.	cytoskeleton
b.	nucleolus
c.	golgi apparatus
d.	nucleus

2. Which is not a characteristic of homologous chromosomes?

-  Homologous chromosomes have the same length.
-  Homologous chromosomes have the same centromere position.
-  **C** Homologous chromosomes have the exact same type of allele at the same **CORRECT**
-  Homologous chromosomes pair up during meiosis I.

Q2.	
	Which stage of meiosis is illustrated above?
a.	Prophase I
b.	Prophase II
c.	Metaphase I
d.	Metaphase II

Q3.	What is the next step for the chromosomes illustrated above?
a.	They will experience replication.
b.	They will experience fertilization.
c.	Their number per cell will be halved.
d.	They will divide into sister chromatid.

Q8.	Which of the following does not contribute to genetic variation?
a.	Chromosome number
b.	Crossing over
c.	Meiosis
d.	Random mating

Q13.	In a cell undergoing meiosis, during which stage do the sister chromatids separate from each other?
a.	Anaphase I
b.	Anaphase II
c.	Telophase I
d.	Telophase II

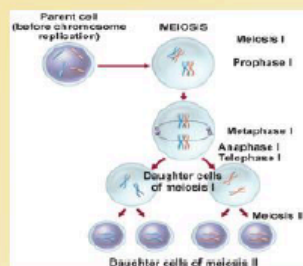
Q15.	DNA replication takes place only once in meiosis, and it results in _____ haploid gametes.
a.	2
b.	3
c.	4
d.	5

3. Which does not occur during telophase II?

- ☒ A. Chromosomes condense. **CORRECT**
- ☐ B. Spindles break down.
- ☐ C. Four nuclei form around chromosomes.
- ☐ D. Cells divide.

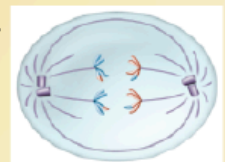
At what stage is the chromosome number reduced from $2n$ to n ?

- A. prophase I
- B. metaphase I
- ☒ C. anaphase I
- D. meiosis II



What is the next step for the chromosomes illustrated?

- A. Chromosomes replicate.
- B. Chromosomes move to opposite poles.
- ☒ C. Chromosomes uncoil and form two nuclei.
- D. Chromosomes line up at the equator.



Which stage of meiosis is illustrated?

- A. prophase I
- B. interphase
- ☒ C. anaphase I
- D. anaphase II

