

A demo Exam 2014

Time 3 hours

Answer four questions only:

Question one:

A. Choose the correct answer: (8 marks)

1. Hyaluronase enzyme works in
(seminal vesicle – corpus luteum – fallopian tube – 2 testes)
2. The size of vertebra number 20 from the vertebral column of the human is the vertebrae number 19.
(smaller than– equal to - slightly bigger than – much larger than)
3. The time interval for pregnancy in cattle is
(5 months – 9 months – 6 months – 11 months)
4. In case of complete dominance the individual with recessive character is
(always pure – sometimes hybrid - always hybrid – sometimes pure)
5. All the following cells are diploid except
(spermatogonia – corpus luteum cells – secondary spermatocytes – primary spermatocytes)
6. If the 2 ovaries stop functioning hormone increases.
(estrogen – progesterone – FSH – relaxin)
7. Marriage occurs between male and female both of them has normal hair they give birth to a child that become infected with premature baldness when he reach the stage of youth, so the genotypes of the parents are
a. ♂ B^+B × ♀ BB b. ♂ BB × ♀ B^+B
c. ♂ B^+B × ♀ B^+B d. ♂ BB × ♀ BB
8. The distance between each 2 successive z lines in the muscle fiber is called
(sarcoplasm – muscle piece – sarcolemma – semi lighted area)

B. Write the difference between each 2 of the following.....? (4 marks)

1. FSH and progesterone hormone. (according to origin and function)
2. Nucleosome and plasmid. (according to structure)

C. You have 3 bottles, the first one labeled with blood group A, the second labeled with blood group B and the third with no label, how can you know the third blood group with what you have from the other blood groups only? (3 marks)

Question two:

A. Write the scientific term: (6 marks)

1. Flat bone with cartilaginous tapering lower part and attached to some ribs.
2. Enzymes work to repair damage in DNA.
3. Different genes carried on the same chromosomes and inherited together.
4. Nitrogen base with single ring join with opposite nitrogen base with 2 hydrogen bonds.
5. Contraceptive method that prevents the entrance of sperms to the vagina.
6. Pairs of alternating characters in certain species in the living organisms.

B. 1. Marriage occurs between a kind of bird has red color with another one has yellow color they give individuals with red, yellow, orange and white colors, explain on genetic basis the genotypes of parents, and resulting individuals then mention the kind of genetic cases. (3 marks)

2. Explain the difference between the spontaneous and induced mutation with an example for each. (2 marks)

C. Give reasons for: (4 marks)

1. Appearance of the dominant character only in the 1st generation in Mendelian experiments.
2. The double helix of DNA is considered as an example for genetic stability in living organisms.

Question three:

A. Choose from column B what is suitable for column A: (6 marks)

A	B
1. Binary fission	a. Reproduction in honey bee and aphid.
2. Budding	b. Reproduction in bread mould and mushroom.
3. Regeneration	c. Reproduction in carrots and tobacco.
4. Sprogony	d. Reproduction in amoeba and paramecium.
5. Parthenocarpy	e. Reproduction in spirogyra and fern plants.
6. Tissue culture	f. Reproduction in yeast and hydra.
	g. Reproduction in Planaria and star fish.

B. Give reasons for each of the following: (4 marks)

1. Muscles are the main responsible for movements.
2. Hemophilia disease is more common in men of some families more than women.

C. 1. Write a brief account about(4 marks)

- a. Amount of DNA in different cells proved that DNA is the genetic material.
 - b. Role of polymerase enzyme in replication of DNA.
2. Define Mendel 1st law. (1 mark)

Question four:

A. Rewrite the following statements after correcting the underlined words:

(6 marks)

1. Mitochondria and chloroplasts contain circular molecule of RNA complicated with histones.
2. Present of more than pair of X chromosome in cells of human female indicates the case of Down.
3. Archegonia in fern plants contain sori of sporangium.
4. The longest bone in human body is ilium.
5. In case of lack of dominance, each phenotype has 3 genotypes.
6. Any difference appears on the identical twins after birth is due to relative's marriage.

B. Compare between each 2 of the following: (6 marks)

1. Phenotype and genotype.
2. Binary fission and budding.
3. Sex linked and sex influenced inheritance.

C. 1. How is the duplication of chromosomes obtained artificially? How it can be used? (2 marks)

2. Explain on genetic basis how can you detect the genotype of a dominant character? (1 mark)

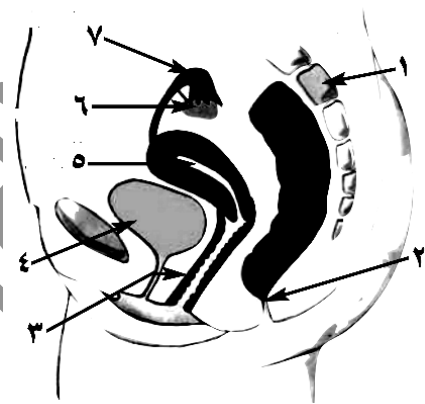
Question five:

A. What would happen in each of the following cases? (6 marks)

1. No pollination or fertilization occurs for a flower of a plant.
2. Transfusion of blood from a person with blood group AB to another one with blood group O.
3. Embryo sac becomes completely surrounded by the 2 integuments of the ovule.
4. Tendril of climbing plant doesn't meet a support.
5. Treatment of proteins and RNA with Deoxyribonuclease enzyme.
6. Amoeba is subjected to unsuitable condition.

B. 1. Study the opposite figure which represents the human female genital system, then answer the following: (5 marks)

- a. What is the name and number of the structure in which fertilization occurs?
- b. What is the number of the structure in which embryonic development takes place?



2. What is meant by?

- a. Complementary genes.
- b. Motor unit of skeletal muscles.

C. 1. Show by a labeled drawing transverse section in testis of an adult human. (2 marks)

2. Write the position and function of: (2 marks)

- a. Nucellus
- b. Antheridia

chapter 7	(8 marks)	Best wishes Your teacher M. Abduljawad
Chapter 8	(28 marks),	
genetics	(25 marks),	
DNA	(14 marks)	