



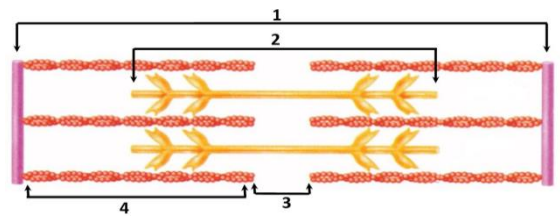
Note: choose the correct option:

(2 marks for each right answer)

- 1- Immediately before entering trachea , the air that comes out from the lungs passes through:-
A-larynx **B-bronchioles** **C-alveoli** **D-two bronchi**
- 2- Which of the following pairs are mismatched?
A-myelinated axons : gray matter of spinal cord **B- dendrites : white matter of cerebrum**
C-unmyelinated axons : white matter of cerebrum **D-All of them are incorrect**
- 3- Which one of the following leads directly to a change in the permeability of the postsynaptic membrane by affecting chemically gated ion channels during the transmission of nerve impulses at the synapse?
A-reaching the action potential to the axon terminal **B-releasing neurotransmitters into the synaptic cleft**
C-the interaction of neurotransmitter and receptor molecules **D-the fusion of vesicles with the presynaptic membrane**
- 4- Yellow bone marrow and Red bone marrow are similar in that both of them:-
A-are found in long bone **B-consist of fat cells** **C-produce blood cells** **D-are found in spongy bone**
- 5- The presence of cocaine in the synaptic cleft blocks the reabsorption of dopamine because cocaine interferes with :-
A-reuptake receptors on the postsynaptic neuron **B-reuptake receptors on the presynaptic neuron**
C-receptor proteins on the postsynaptic neuron **D-sodium ionic channels on the postsynaptic neuron**
- 6-the addict approaches lethal dose.
A-before tolerance **B-before dependence** **C-whenver the effective dose rises** **D-after withdrawal**
- 7- During childbirth, the fetus passes through the greatly enlarged:-
A-cervix and vagina **B-fallopian tube and vagina** **C-vagina and urethra** **D-cervix and urethra**
- 8- According to the information provided by the adjacent table that shows several monohybrid crosses , each cross produces 100 individuals in which cross only one of the parents can be a hybrid? :
- | cross | Number of individuals which express the dominant trait | Number of individuals which express the recessive trait |
|-------|--|---|
| 1 | 74 | 26 |
| 2 | 51 | 49 |
| 3 | 100 | 0 |
- A-only 1**
B-only 2
C-1 and 2
D-2 and 3
- 9- Which of the following has a hybrid individual?
A-a brown rabbit **B-a pea plant that has terminal flowers**
C- a pea plant that has yellow pods **D-None of them are correct**
- 10- In the bone formation of which of the following bones ,the osteocytes are initially scattered randomly throughout the embryonic connective tissue but soon fuse into layers and become flat plates of bones?
A-in the bones that develop directly into hard bone without forming cartilage first **B-in all kind of bones**
C-in the bones that form cartilage first **D-only in the bones of the appendicular skeleton**
- 11- Smooth muscle fibers differ from skeletal muscle fibers in that smooth muscle fibers:-
A-are not surrounded by connective tissue **B-are surrounded by connective tissue that unite to form tendons**
C-are surrounded by connective tissue that does not unite to form tendons **D-are multinucleate**
- 12- Which of the following hormones is a steroid hormone and fat soluble?
A-thyroxine **B-triiodothyronine** **C-cortisol** **D-All of them are correct**
- 13- Which of the following is correct about antigens :- **A-is a substance that stimulates an immune response**
B- antigens that are normally present in a person's body provoke no response
C-pathogens or parts of pathogens , bacterial toxins , insect venom and pollen are various kinds of antigens
D-All of them are correct
- 14- The.....joint enables to rotate the arm in a complete circle:-
A-pivot **B-hinge** **C-ball-and-socket** **D-gliding**

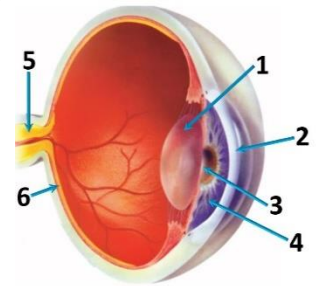
15- In the adjacent figure which number points to the region that is disappeared when the skeletal muscle is fully contracted?

- A-1
- B-2
- C-3
- D-4



16- According to adjacent figure choose the correct answer from the following table:-

	Which structure with muscles attached to it bends the rays of the incoming light?	The structures through which light passes	Is a clear protective layer through which light passes first	Millions of axons that exit the eye, which of the following structures form?
A	3	2, 4, 3, 1	4	6
B	1	2, 3, 1	2	5
C	3	2, 3, 1	4	6
D	1	2, 4, 3, 1	2	5



17- Pea plants normally reproduce through.....Mendel was able to prevent this kind of pollination by removing all of thefrom the flowers of a plant.

- A-self pollination , stigmas
- B- self pollination , anthers
- C-cross pollination , stigmas
- D- cross pollination , anthers

18- Cytotoxic T cells recognize cells that have been infected by the pathogen because they have..... on their surfaces that match the.....on the surfaces of the infected body cell.

- A-receptor proteins , antigens
- B-viral antigens , receptor proteins
- C-viral antigens , antigens
- D-receptor proteins , receptor proteins

19- Hair cells are located in the :-

- A-semicircular canals
- B-organ of Corti
- C-middle ear
- D-Both (A + B) are correct

20- In which of the following blood transfusions antibodies for Rh may react with the Rh antigens?

- A- (AB⁺) → (AB⁻)
- B- (O⁻) → (B⁺)
- C- (A⁺) → (B⁺)
- D-(B⁻) → (B⁻)

21- In normal states (mostly) the immune system does not attack the organism's own cells because the lymphocytes that recognize and react to the body's own cells:-

- A-are not eliminated during development
- B-are not produced in the bone marrow
- C-are eliminated during development
- D-the body produces antibodies to kill them

22- Urethra is a duct:-

- A-through which both urine and sperm exit the body at the same time
- B-through which only urine exits the body
- C-in which the fluid secreted from the seminal vesicles mixes with the sperm
- D-Both (B + C) are correct

23- Which of the following is not true about the spleen?

- A-it is the largest lymphatic organ
- B-it collects pathogens from the lymph
- C-it contains lymphocytes
- D-Both (B + C) are correct

24- Both thyrotropin releasing hormone and thyroid-stimulating hormone:-

- A-are secreted from the same endocrine gland
- B-have the same target cell
- C-regulate the concentration of thyroid hormones in the blood through negative feedback
- D-All of them are correct

25- Memory cells are formed for the first time in.....response.

- A-primary immune
- B- secondary immune
- C-inflammatory
- D-temperature

26- Allantois is formed during the.....period.

- A-first trimester of pregnancy
- B-second trimester of pregnancy
- C-third trimester of pregnancy
- D-egg formation

27- Which of the following is true about oxytocin hormone ?

- A-stimulates flow of milk from the breasts during lactation
- B-is made by posterior pituitary
- C-stimulates milk production in breasts during lactation.
- D-Both (A + B) are correct.

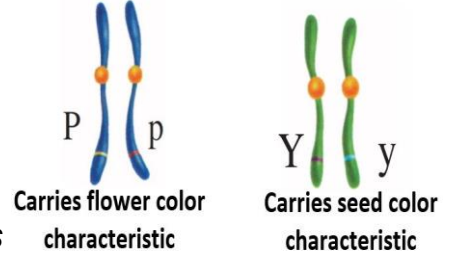
28- In which of the following crosses the phenotype ratio and the genotype ratio is not equal?

- A-GGBb × ggBb
- B- Ggbb × ggBb
- C- GG × gg
- D- Gg × gg

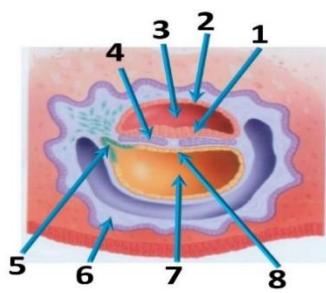
- 29- All of the following are part of the lymphatic system except:-
A-lymphatic capillaries **B-the vessels that carry lymph from the heart to the tissues**
C-lymph nodes **D-the vessels that return lymph from the tissues to the superior vena cava**
- 30-it is a part of the brain that interprets touch information
A-thalamus **B-medulla oblongata** **C-cerebrum** **D-midbrain**
- 31- Body hair helps humans sense touch because bending a hair stimulates large numbers of found at the base ofin the skin.
A- thermoreceptors , the epidermis **B- chemoreceptors , the epidermis**
C- mechanoreceptors , hair follicles **D- chemoreceptors , hair follicles**

- 32- The pulmonary arteries and the aorta are similar in that:-
A-their walls are composed of three layers **B-both vessels carry oxygenated blood to the heart**
C-both vessels carry oxygenated blood away from the heart **D-Both (A + C) are correct**

- 33- According to adjacent figure that represents a pair of homologous chromosomes for a pea plant, choose the correct answer.
A-the pair of factors P and p is not separated , during the formation of gametes
B-the inheritance of flower color characteristic is independent from the inheritance of seed color characteristic
C- the pair of factors Y and y is not separated , during the formation of gametes
D-the law of independent assortment is not observed for both genes (P ‘ p)and (Y ‘ y)



- 34- In the adjacent figure which numbers point to the primary germ layers
A-6 , 2 , 5
B-1 , 4 , 8
C-4 , 7 , 2
D-6 , 1 , 3



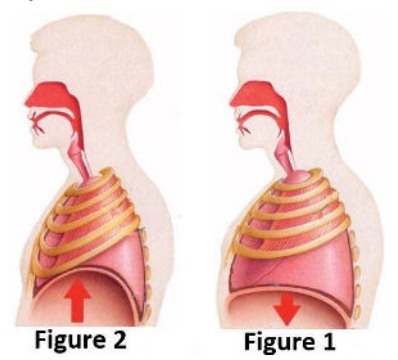
- 35- Which of the following is an example of integration of organ systems?
A-nutrients from the digestive system are distributed by the cardiovascular system
B-The efficiency of the cardiovascular system depends on nutrients from the digestive system and oxygen from the respiratory system
C-The endocrine system secretes hormones which regulate the activity of the reproductive system **D-All of them are correct**
- 36- Which of the following options describes adjacent figures correctly?:-

	In figure.1	In figure .2
A-	Diaphragm contracts	relaxes
	Rib muscles relax	contract
	Thoracic cavity expands	contracts

	In figure.1	In figure .2
C-	Diaphragm relaxes	contracts
	Rib muscles relax	contract
	Thoracic cavity contracts	expands

	In figure.1	In figure .2
B-	Diaphragm relaxes	contracts
	Rib muscles contract	relax
	Thoracic cavity contracts	expands

	In figure.1	In figure .2
D-	Diaphragm contracts	relaxes
	Rib muscles contract	relax
	Thoracic cavity expands	contracts



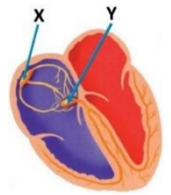
- 37- All of the following about the first polar body and the second polar body are incorrect except both of them are:-
A-haploid cells **B-produced in the fallopian tube** **C-produced in the ovary** **D-diploid cells**
- 38- The sharp rise in the LH level that occurs midway through the ovarian cycle causes:-
A-menstruation **B-the follicle to rupture and release its egg** **C-implantation** **D-the follicle to form**
- 39- In a dyhybrid cross(hybrid*hybrid)the expected number of different genotypes and the expected number of different phenotypes are:-
A-nine genotypes and four phenotypes **B-four genotypes and nine phenotypes**
C- four genotypes and four phenotypes **D-nine genotypes and nine phenotypes**
- 40- Both neuropeptides and neurotransmitters are secreted by the:-
A-endocrine glands and are classified as hormones **B-nervous system and are classified as hormones**
C-endocrine glands and act as chemical messengers . **D-nervous system and act as chemical messengers**

41- In complete dominance the phenotype might not always indicate genotype because:-
 A-two or more alleles influence the phenotype B-some environmental factors can affect the phenotype
 C-The same phenotype may appear for a homozygous dominant genotype and a hybrid genotype
 D-Both (B + C) are correct

42- Which of the following is not an example of connective tissue?
 A-blood B-the outer layer of blood vessels structure C-the tissue that lines the trachea D-fat tissue

43- According to the adjacent figure,both structure X and Y

- A-are two areas of specialized tissue known as nodes
- B-are called pacemaker
- C-every 0.8 of a second they send an electrical pulse to the walls of the atria
- D-Both (A + B) are correct

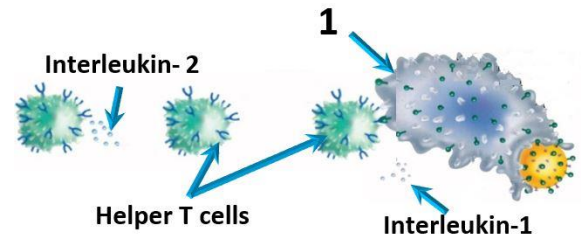


44- Both testes produce:-
 A-sperm B-sex hormones C-the fluids that nourish and protect the sperm D-Both (A + B) are correct

45- Which one of the following is correct regarding the neuron when at rest(during the resting potential)?
 A-the concentration of potassium ions K^+ is greater inside the cell than outside
 B-the concentration of potassium ions K^+ is greater outside the cell than inside
 C-the concentration of negatively charged proteins is greater outside the cell than inside
 D-the concentration sodium ions Na^+ is greater inside the cell than outside

46- In the adjacent figure, all of the following about the cell which is labeled 1 are correct except it.

- A-displays antigens
- B-is activated by interleukin 1
- C-engulfs pathogens
- D-is a type of white blood cells



47- Aspirin and acetaminophen reduce fever and decrease pain by inhibiting synthesis.
 A-prostaglandins B-endorphins C-enkephalins D-All of them are correct

48- Which of the following crosses produces a pink flowers four o'clocks?

- A-red flowers four o'clocks \times pink flowers four o'clocks B-red flowers four o'clocks \times white flowers four o'clocks
- C- pink flowers four o'clocks \times pink flowers four o'clocks D-All of them are correct

49- In pea plants tallness (T) is dominant to shortness (t) and round seeds (R) is dominant to wrinkled seeds (r) a cross performed between a pea plant that have tall stem and round seeds with another pea plant that have short stem and wrinkled seeds the resulting plants for the seed texture were all round seeds and for the tallness half of them were long-stemmed and the other half were short-stemmed , which of the following genotypes represents the genotype of the parents for both characteristics together?

- A-ttRr \times ttr B- TtRR \times ttr C- ttRR \times ttr D- TTRr \times ttr

50- activates the complement system in the humoral immune response.

- A-encountering a certain pathogen B- forming a ring-shaped structure
- C-antigen-antibody binding D- releasing interferon

A