

Exam on the first 10 Lecture

1. What is the role of sweat glands in the negative feedback loop for regulating body temperature?

- a) They generate heat to increase body temperature.
- b) They detect changes in blood glucose levels.
- c) They work to counteract the stimulus by reducing body temperature.
- d) They transmit information to the temperature-regulatory control center.

2. What is the process called when only fluids are transported by vesicular transport from the extracellular compartment?

- a) Phagocytosis
- b) Exocytosis
- c) Endocytosis
- d) Pinocytosis
- E) non of the above

3. Which of the following is a characteristic of facilitated diffusion?

- a) Movement of particles against the concentration gradient
- b) Requirement of ATP for the process
- c) Involvement of vesicles
- d) Utilization of protein carriers
- E) All of the above

4. Which of the following processes requires the direct breakdown of ATP to move substances against their concentration gradient?

- a) Vascular transport
- b) Active transport
- c) Simple diffusion
- d) Facilitated diffusion
- E) passive transport

5. Which of the following best describes the movement of water during osmosis?

- a) Movement of water from a higher solute concentration to a lower solute concentration
- b) Movement of water from a lower solute concentration to a higher solute concentration
- c) Movement of solutes from one compartment to another
- d) Movement of water along a concentration gradient
- E) A and D

6. In a hospital error, a 60-year-old woman is infused with large volume of a solution that causes lysis of her red blood cells (RBCs). The solution was most likely :

- A) 150mM NaCl
- B) 150mM CaCl<sub>2</sub>
- C) 100mM NaCl
- D) 350mM mannitol
- E) 200mM urea

7. The highest Conductance for  $K^+$  during an action potential is at the :

- A) Depolarization before reaching threshold
- B) Firing stage of an action potential
- C) overshoot an action potential
- D) Repolarization phase
- E) at resting potentials

8. All the followings may describe the parasympathetic system EXCEPT:

- A) When stimulated it causes an increase in intestinal movements
- B) Second neurons release a neurotransmitter that binds to muscarinic receptors
- C) It dominates in quiet and relaxed situation
- D) Its postganglionic neurons can also be stimulated by nicotine
- E) When stimulated it is increasing sweating

9. In osmosis, water moves from a compartment of \_\_\_\_\_ concentration of water to a compartment of \_\_\_\_\_ concentration of water.

- a) Lower, higher
- b) Higher, lower
- c) Equal, equal
- d) Unpredictable, unpredictable

10. Which of the following is NOT true with regard to an action potential at neurons :

- A) Depolarization can appear by activation of  $\text{Na}^+$  channels.
- B) Positive after potential is more negative than the resting potential.
- C) At threshold, there will be activation of Voltage gated channels.
- D) Action potentials appear by activation of  $\text{Na}^+/\text{K}^+$  pumps
- E) At the overshoot, the membrane potential is positive inside with regard to outside

11. An Example of primary active transport is the :

- A) glucose carrier
- B) sodium-linked glucose transport
- C) sodium-linked counter transport
- D) cholesterol through plasma membrane
- E) calcium pump

12. Which of the following is NOT characterizing a membrane during absolute refractory period?

- A) The membrane potential is closer to zero mv than the resting potential
- B) The membrane is having higher conductance for  $K^+$  than for  $Na^+$
- C) Voltage gated  $Na^+$  channels are opened
- D) Voltage gated  $k^+$  channels are activating
- E) High conductance is for  $Na^+$

13. At the resting membrane potential of an excitable cell the driving force for ions is:

- A) The highest for  $K^+$
- B) The highest for  $Na^+$
- C) The highest for  $CL^-$
- D) Equal for all ions
- E) None of the above

14. One of the followings does NOT characterize the sympathetic nervous system:

- A) Has acetylcholine as transmitter in preganglionic neuron
- B) Is always giving excitatory responses
- C) Is a part of the autonomic nervous system
- D) Has short preganglionic and long post ganglionic fibers
- E) Promotes responses for fight or flight reaction

15. Which term describes the cell membrane potential of a neuron at rest?

- A) polarized.
- B) Hyper-polarized.
- C) neutral.
- D) repolarized.
- E) depolarized

16. At what membrane voltage do neuronal voltage-gated  $\text{Na}^+$  channels become activated?

- A) -90 mV
- B) -65 mV
- C) 0 mV
- D) +35 mV
- E) -60 mV

17. How does the presence of unsaturated fatty acids affect the fluidity of the membrane?

- a) Increases fluidity
- b) Decreases fluidity
- c) No effect on fluidity
- d) Depends on the temperature

18. What is the physiological response of the autonomic nervous system to a warm environment?
- A) Cutaneous vasoconstriction and sweating
  - B) Pupil dilation
  - C) Increased heart rate and force of contraction
  - D) Digestive system activation
  - E) C And D
19. Which response is NOT associated with the fight or flight response mediated by the ANS?
- a) Increased heart rate and force of contraction
  - b) Constriction of the pupils to bright light
  - c) Pale skin due to blood redirection
  - d) Dry mouth
20. What happens to the membrane fluidity as the temperature decreases in a membrane composed of saturated phospholipids?
- a) It increases
  - b) It decreases
  - c) It remains unchanged
  - d) It depends on the cholesterol



21. Which type of receptor is found in the heart and is coupled to K<sup>+</sup> channels?

- A) Nicotinic receptor
- B) M1 receptor
- C) M2 receptor
- D) M3 receptor
- E) M4 receptor

22. Muscarinic receptors are primarily found on:

- A) Sympathetic neuro-effector junctions
- B) Ganglia and neuromuscular junctions
- C) Parasympathetic neuro-effector junctions
- D) Sensory neurons
- E) Non of the above

23. Which neurotransmitter is released by preganglionic neurons of both sympathetic and parasympathetic systems at the ganglion?

- a) Acetylcholine
- b) Norepinephrine
- c) Epinephrine
- d) Dopamine

24. After hyperpolarization Wave record with an action potential refers to :

- A) The membrane potential before reaching threshold.
- B) The membrane potential when becoming positive inside with regard to outside.
- C) The resting membrane potential before starting action potential.
- D) The membrane potential during absolute refractory period.
- E) The more negative than the resting potential after repolarization phase.

25. Stimulation of the alpha 1 receptor leads to:

- a) Inhibition of IP3 production
- b) Release of  $\text{Ca}^{2+}$  from intracellular stores
- c) Activation of adenylyl cyclase
- d) Decreased cAMP production
- E) Non of the above

1- C  
2- D  
3- D  
4- B  
5- B  
6- C  
7- D  
8- E  
9- A

10- D  
11- E  
12- B  
13- B  
14- B  
15- A  
16- B  
17- A  
18- A

19- B  
20- B  
21- C  
22- C  
23- A  
24- E  
25- B

جاءت العشر الأواخر اغتنموا بركاتها  
وفضيلتها ودعواتكم لنا ولأهلنا في غزة