HSS 2305

PRETEST : Chapter 4

Multiple choices

1) Sarin is:

a) an enzyme poison

b) a nerve gas

c) a very small molecule

d) all answers are good

2) Which is the most studied and well understood as regard to the plasma membrane structure ?

a) a skin cell

b) a cell form the respiratory lining

c) a red blood cell

d) a cell from the mouth lining

3) The PAGE-SDS technique is used for _____ among which are _____ ?

a) separating layers of phospholipids — those with choline

b) fractionating different erythrocyte proteins — spectrins

c) separating the glycocalix components — glycoproteins

d) fractionating the different DNA nucleotides — purines

4) Inherited disorders can affect the movement of ions across the plasma membrane. Which is the best match concerning the affected movement and the resulting disease ?

a) simple diffusion through ion channel — cystic fibrosis

b) active transport — muscular dystrophy

c) facilitated transport — ataxia

d) active transport — convulsion

5) During synaptic transmission, at what time do voltage-gated calcium channels open ? What is the consequence ?

a) after depolarization — fusion of synaptic vesicles with the postsynaptic membrane

b) before depolarization — release of neurotransmitter

c) after release of neurotransmitter — excitation of the cell

d) none of these answers

6) Which ion channel is directly concerned with cystic fibrosis ?

a) sodium

b) potassium

c) iodine

d) chloride

7) Why are ciliated cells not able to beat readily in people with cystic fibrosis ?

a) mucus is not produced at all

b) ciliated cells are death

c) mucus is not properly hydrated

d) mucus in infected with unusual bacteria

8) Antidepressants inhibit the reuptake of _____ while cocaine inhibits the reuptake of _____

a) acetylcholine serotonin

b) dopamine acetylcholine

c) serotonin dopamine

d) none of these combinaisons

9) Which is true about delta-tetrahydrocannabinol ?

a) acts a little the same way as endomorphin

b) affects only the memory of the addicted person

c) binds to CBI receptors located on the postsynaptic neuron

d) binds to CBI receptors located on the presynaptic neuron

10) Endocannabinoids

a) are produced naturally

b) binds to receptors on the presynaptic neurons of certain regions of the brain

c) suppress synaptic transmisson

d) all are good

True or false

1) Hemolysis is a treatment that can be used to isolate ghost membrane : _____

2) In people suffering from cystic fibrosis, CFTR is produced but not properly process by RER : _____

3) Phenylalanine is an amino acid that is not encoded by gene in people suffering from cystic fibrosis : _____

4) After a synaptic transmission, the only way to eliminate a neurotransmitter is by destruction : _____

5) Mild inhibitors of acetylcholinesterase can be used to treat people with AD : _____

Matching test

Match the kind of erythocyte protein (column A) to a specific function (column B)

Column A

1) spectrin : _____

2) glycophorin : _____

3) band 3 : _____

4) actin : _____

Column B

a) makes the RBC reppel

b) contributes to a network by its contractility

c) channel for passive exchange of anions

d) along with a contractile protein, contributes to elasticity and strenght of the RBC

Short answer

1) Name three general functions of membranes (be it a plasma membrane or a cytoplasmic membrane).

2) Draw a network of spectrin - actin- tropomyosin as viewed from the inner side of a RBC plasma membrane

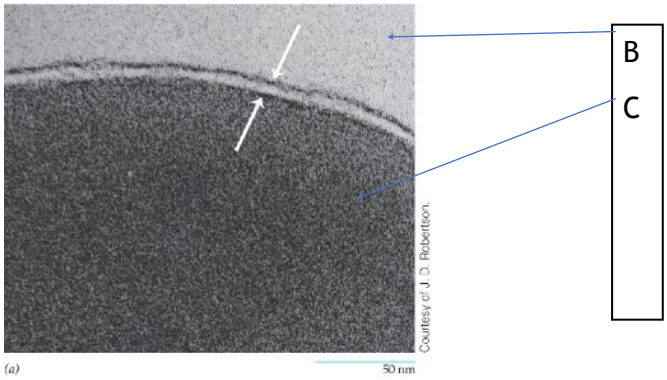
3) Discuss about the importance of a lipid bilayer with respect to keeping the integrity of a plasma membrane as well as the cell it surrounds.

4) Explain why the absence of dystrophin can cause death of muscle cell plasma membrane; What is the consequence on the child which is born with such a disease ?

5) Explain why people with cystic fibrosis are constantly threatened by lung infections. What can be given to help these people ?

Figures

1) In this picture, how many layers of hydrophilic polar heads are there ? Indicate by a letter A the location of the two layers of hydrophilic nonpolar tails. Where is the cytoplasm : in B or C



2) Indicate by a letter A the location of the extracellular environment. Does this picture stand for a double membrane ? Explain why.