Biology 1010 Exam 2 REVIEW

Terms in this set (71)

Which of the following is not a general characteristic of life we discussed?	Specializations
Multicellular life relies on the actions of individual cells to support whole organism functioning. Which of the following is not an example of individual cells contributing to a whole-body function?	Teeth chewing food to begin breaking it down in an individual's mouth

Cells perform all of the same life functions as multicellular organisms (example is a squirrel).	True
A major theme of this unit was the relationship between the structures of life and the functions they perform. Which of the following is an example of this theme at the cellular level?	The endoplasmic reticulum, golgi, and cell membrane are all made of phospholipids allowing vesicles to fuse into and out of them
An individual has a mutated gene that codes for the motor proteins of their cells. If this mutation made these motor proteins less efficient, which of the following cellular functions would be impacted?	Secretion of hormones produced by the cell into the blood
If the vesicles of a cell are not traveling to the correct destination, what organelle may be contributing to this?	Golgi
At what point is information originally from DNA used to build a physical protein?	When mRNA is read by ribosomes outside of the endoplasmic reticulum

Which best explains the life function performed by your ventilation system.	Maintains a high concertation of oxygen and low concentration of carbon dioxide in the alveoli
The order and arrangement of digestive organs allow the system to best perform its function. What would be a result of reorganizing the system so that the small intestine was directly after the mouth? (the remaining organs are in the same place)	Macromolecules would not be broken as efficiently by enzymes resulting in less absorption
What are the functions of villi and microvilli in the digestive tract?	These increase the surface area by which absorption of nutrients can take place
The structures of the heart allow for efficient pumping of blood throughout the body. Which of the following is not a structure of the heart that contributes to this function?	Capillaries in the heart allow for gas exchange which converts deoxygenated blood to oxygenated blood
When the heart pumps blood into the body this results in increased blood pressure, which of the following has a structure which allows them to best deal with this change in pressure?	Arteries

Which of the following vessels is where gas exchange takes place?	Capillaries
An individual is found to have "sweet" urine (i.e. lots of glucose in it). What could be a potential cause of this based on what we discussed in class?	Glucose not being reabsorbed in the nephron
Which process most directly contributes to multicellular organism growth?	Mitosis
In comparison to the G1 (Gap) phase of the cell cycle, how much DNA is present in the G2 (Gap) phase of the cell cycle?	Twice as much

A cell begins to divide rapidly. This does not necessarily mean that cancer will result. Which of the following will increase the chances that cancer will occur?	-The cell can bypass checkpoints in the cell cycle -The cell cannot efficiently repair DNA mutations prior to mitosis The cell has mutations in genes that regulate cell growth
Similarities in both the tissues and structures of female and male genitals indicate that:	Female and male genitals arise from the same area and the same initial tissues during development
Females and males vary in the strategies they use to produce sex cells (sperm and eggs). Female's strategy is to:	Produce few sex cells but these are of high quality
Why is cancer hard to cure in the body?	Cancer does not equally occur in all tissues of the human body
In multicellular animals (ex: birds, insects, etc.) males make the sole decision as to which females they mate with.	False
Evolutionary conflicts arise because male strategies for reproduction are different from those of females. Which of the following is an example of this conflict?	Females that can influence which sperm fertilize their eggs after mating with multiple males
What is a potential result from having a nonfunctional SRY gene?	The individual will develop into a female even with a Y chromosome present
Plants lack mobility (i.e. they can't get up and move around) in order to find a partner to mate with. What is one strategy that has evolved in angiosperms to overcome this limitation in their ability to fertilize?	Using pollinators to transfer their sex cells to another plant to fertilize its eggs
Which of the following is characteristic of cancerous tissues when viewed through a microscope?	The loss of tissue structure and general disorganization of cells
How is life different from non-life?	-we grow reproduce and die -reproduce, take in/transport raw materials -excretions of wastes, defense/protection, use of energy, being able to sense and respond to environment

How are cells critical to growth?	cell division is how we grow from a fertilized egg into an actual human being (mitosis)
How does the precess of cell devision actually happen?	through mitosis
How does the digestive system's structure supports its function?	microvilli and villi in the small intestine help food be absorbed
How does the ventilation system's structure supports its function?	lungs have more surface area because of alveoli and increase area where gas exchange can occur
How does the circulatory system's structure supports its function	the muscle around the ventricle allows the heart to be able to pump blood to the body
How does the excretory system's structure supports its function	the structure of the nephron allows for waste to be filtered through and sent to the bladder
How does the reproductive system's structure supports its function	the structure of the testes allows more surface area so more sperm can be reproduced
What is the connection between structures and functions of life?	Structure determines function
In some cases structures are involved in more than one function. What is an example of this from class? What can happen when such a situation occurs?	pelvis is involved in walking and childbirth but there is an evolutionary trade-off because the pelvis can make birthing difficult
How can we compare data when it is presented in a "box and whisker" format? (example from class was with the pheromones study)	You can compare the middles
What impact do pheromones seem to have on human attraction?	none
What is a taxis behavior? What are some examples and how are they different from human behaviors?	taxis behaviors: a living thing is either attracted to or repelled by a specific stimuli (light, gravity) EX: cockroaches being attracted to light.

To what extent do viruses classify as being living based on the three general characteristics and need for cells to be present?	they could be considered living because they grow reproduce and die
Why is DNA critical to cellular function?	it holds information of how to make things that are needed in the cell. Without it there would be no instruction of how to build proteins.
How do the structures of cells support the function of protein production?	The nucleus holds the info of how to build a protein and it is sent out of the nucleus by the mRNA and the ribosome makes the protein.
How can we tell the destination of a protein once it is produced?	based on the function of the protein and whether or not it is a membrane protein, an internal protien, or a secreted protein.
How do the "pathways" of proteins through a cell differ based on their destination?	it is determined whether or not they're built in the membrane and if they're going towards the organelle or not.
What types of proteins go through each transportation pathway through a cell?	internal, membrane proteins, and secreted.
How can scientists track where proteins travel in a cell?	through immunoflorescence: custom made antibodies built with florescent dye molecules so they can "tag" a certain protein they want to follow.
What role does DNA play in a cell?	holds info of how to make proteins
What role does the mRNA play in a cell?	transfers message of how to make proteins
What role does the rough ER play in a cell?	has ribosomes to build proteins
What role does the smooth ER play in a cell?	makes lipids and fats
What role does the mRNA Golgi play in a cell?	repackages and resorts proteins in a bubble of phosphilipids (vesicle)
What role do vesicles play in a cell?	holds proteins or enzymes inside
What role do the motor proteins play in a	move things around in the cell

What role do lysosomes play in a cell?	have digestive enzymes that break down and recycle old/unneeded biomolecules
What role does the mitochondria play in a cell?	makes ATP from glucose and cellular respiration
What role does the cytoskeleton play in a cell?	provides structure and is the highway of the cell
What role do chloroplasts play in a cell?	where photosynthesis takes place
What role does the phospholipid membrane play in a cell?	lets certain things in or out (selective permiability)
How does the structure of the mouth relate to their function?	has teeth and saliva to break down food to a greater surface area
How does the structure of the esophagus relate to its function?	transports food to the stomach. flexible
How does the structure of the trachea relate to its function?	allows us to breathe. Not flexible
How does the structure of the small intestine relate to its function?	has villi and microvilli to increase surface area and absorb nutrients
How does the structure of the large intestine relate to its function?	absorbs water before getting rid of poop
How does the structure of the lungs relate to its function?	has alveoli which increases surface area for oxygen and is used for gas exchange
How does the structure of the heart relate to its function?	has chambers taht allow it to pump blood
How does the structure of the veins/arteries/capilaries relate to its function?	-have valves that prevent blood going backwards to the heart -take blood away from heart and has thick walls -tiny blood vessels close to air in alveoli for gas exchange
How can the concept of "maximizing surface area" be used to explain human	more surface area gives us a better way to retain nutrients (oxygen and food).

What is the difference between mechanical and chemical means of digestion? Why do we do both and not just one or the other?	-mechanical: physical movements to break down food -chemical: enzymes break down food -if we didn't have both our food would never be broken down
What roles does the liver, pancreas, and gall bladder play in the digestive tract?	-liver: uses bile salts to break down food -pancreas: adds lipase (digestive juices) as food leaves stomach -gallbladder: contracts and squeezes bile onto food
What happens in a cell as it goes through mitosis?	G1: growth makes nuclues bigger to divide S: DNA replicates G2: growth and preparation for cell division Cytokenisis: cell divides
What is the cell cycle? Why do we have a cell cycle? What events happen during the cell cycle?	we need a cycle to keep our organs functioning and keep us alive
Explain how cancer cells are different than normal cells. Include differences in genes as well as their organization at the tissue level?	-vary in size, shape, larg # of division, and poorly defined boundaries -changes genes which change info for protein which change its function