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REVIEW GUIDE FOR BODY SYSTEMS Chapter 28- 33

<p>State Standards- what the state says you need to know. Will be tested on your unit test.</p>	<p>Terms- on a separate piece of paper define the following terms</p>	<p>Questions/Review- complete these review exercises to help you prepare for your quizzes, tests, etc. You should also review your labs, homework, journal, and other class activities.</p>
<p>B2.3d Identify the general functions of the major systems of the human body (digestion, respiration, reproduction, circulation, excretion, protection from disease, and movement, control and coordination)and describe ways that these systems interact with each other.</p>	<p>CHAPTER 38 Axial skeleton Appendicular skeleton Bone marrow Periosteum Osteoporosis Joint Ligament tendon Skeletal muscle Cardiac muscle Smooth muscle</p>	<p>1. IN YOUR OWN WORDS.... State the functions of each of the following systems of the human body.</p> <ul style="list-style-type: none"> a. cardiovascular b. respiratory c. digestive d. excretory
	<p>CHAPTER 39 Artery Capillary Vein Plasma Red blood cells White blood cells Platelets Blood typing</p>	<ul style="list-style-type: none"> e. immune f. nervous g. skeletal h. muscular
	<p>Heart Atrium Ventricle Blood pressure Pulse Heart attack Stroke</p>	<ul style="list-style-type: none"> i. endocrine

B2.3e Describe how human body systems maintain relatively constant internal conditions (temperature, acidity and blood sugar).

Trachea
Bronchus
Alveolus
Diaphragm
Asthma
Emphysema
Lung cancer

CHAPTER 32
Nutrient
Digestion
Calorie
Vitamin

Esophagus
Stomach
Small intestine
Colon
Liver
Pancreas
Peristaltic movement

Excretion
Kidney
Nephron
Urine

2. For each of the following organs or tissues:
 a. identify the human body system(s) to which it belongs.
 b. identify ALL the body systems that it interacts with.

ORGAN or TISSUE	(a)	(b)
Brain		
Heart		
Kidney		
Lung		
Esophagus		
Liver		
Skin		
Colon		
Pancreas		
Lymph nodes		
Sensory nerves		
Bicep		
Thyroid		

3. Choose any ONE of the organs/ tissues in the table above and describe, IN YOUR OWN WORDS, how it contributes to homeostasis.

<p>B2.5B Explain how major systems and processes work together in plants and animals, including relationships between organelles, cells, tissues, organs, organ systems, and organisms. Relate these to molecular functions.</p>	<p><u>CHAPTER 31</u> Pathogen Inflammatory response Histamine Macrophage First line of defense Second line of defense</p>	<p>4. Choose any TWO of the following systems and describe (IN YOUR OWN WORDS) how they interact with each other. Digestive, excretory, cardiovascular, respiratory, immune, nervous, endocrine, skeletal, muscular</p>
<p>B2.3f Explain how human organ systems help maintain human health.</p>	<p>Third line of defense B cells T cells Antibody Immunity Vaccine</p>	<p>5. Place the following words in the proper order from simplest to most complex: organelle, protein, organ, tissue, organ system, cell</p>
<p>B2.3g Compare the structure and function of a human body system or subsystem to a nonliving system (e.g. human joints to hinges, enzymes and substrates to interlocking puzzle pieces).</p>	<p><u>CHAPTER 29</u> Neuron Nerve Synapse Neurotransmitter Central nervous system Peripheral nervous system Brain Spinal cord Reflex Motor neuron Sensory neuron Sensory receptors</p>	<p>6. Choose any TWO of the following systems..... Digestive, excretory, cardiovascular, respiratory, immune, nervous, endocrine, skeletal, muscularand describe (IN YOUR OWN WORDS) a. how they keep your body healthy. b. at least two diseases that can occur when the system doesn't work correctly.</p>

B2.4B Describe how various organisms have developed different specializations to accomplish a particular function and yet the end result is the same (e.g., excreting nitrogenous wastes in animals, obtaining oxygen for respiration)

B2.4C Explain how different organisms accomplish the same result using different structural specializations (gills vs. lungs vs. membranes)

7. Complete the following table in reference to the circulatory system.

Animal	Open or Closed	Describe the heart
earthworm		
grasshopper		
clam		
frog		
pig		
humans		

8. Choose any two organisms, from the chart above, to compare (how they perform the same function) and contrast (how they are different):

a. their digestive systems.

b. their excretory systems

c. their skeletal systems

d. their respiratory systems

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HSCE REVIEW GUIDE FOR CELL ENERGETICS

Photosynthesis/Cellular Respiration Chapter 4/ 21.4

<p>State Standards- what the state says you need to know. Will be tested on the ACT test junior year.</p>	<p>Terms- vocabulary words from our unit that you need to know</p>	<p>Questions/Review- complete these review exercises to help you prepare for your quizzes, tests, etc. You should also review your labs, homework, journal, and other class activities.</p>
<p>B2.5d Describe how individual cells break down energy-rich molecules to provide energy for cell functions.</p>	<p>4.1 ATP ADP Chemosynthesis</p>	<p>1a. Draw an ATP molecule and indicate where the available energy is which does work in the cell.</p>
<p>B2.5e Explain the interrelated nature of photosynthesis and cellular respiration in terms of ATP synthesis and degradation.</p>	<p>4.2 photosynthesis chlorophyll thylakoid light dependent reaction light independent reaction</p> <p>4.4 cellular respiration aerobic glycolysis anaerobic Kreb's cycle</p>	<p>b. Describe the energy flow that occurs through photosynthesis, cellular respiration and to the ATP molecule.</p>
<p>B2.5f Relate plant structures and functions to the process of photosynthesis and respiration.</p>	<p>4.6 fermentation lactic acid</p> <p>21.4 blade petiole mesophyll guard cell</p>	<p>2. Explain how each of the following structures relates to photosynthesis:</p> <p>a. leaf (mesophyll)</p> <p>b. chloroplast</p>

c. thylakoid

d. chlorophyll

e. stroma

3. Explain how each of the following structures relates to cellular respiration.
a. cytoplasm

b. mitochondria

4. In your own words explain the process of photosynthesis. Include the purpose/ reactants/products/ chlorophyll/ and energy flow.

B3.1f Summarize the process of photosynthesis

B2.4e Explain how cellular

<p>respiration is important for the production of ATP (build on aerobic and anaerobic)</p> <p>B3.1b Illustrate and describe the energy conversions that occur during photosynthesis and respiration.</p> <p>B3.1c Recognize the equations for photosynthesis and respiration and identify the reactants and products for both.</p>		<p>5a. In your own words explain the process of cellular respiration. Include the purpose/ reactants/products/ mitochondria/ and energy flow.</p> <p>5b. Compare and contrast aerobic and anaerobic respiration. Be sure to include where they occur, how their products and ATP production are different and how the processes are the same.</p> <p>6a. Write the balanced equation for photosynthesis (for a complete glucose molecule). Label reactants and products.</p> <p>6b. Write the balanced equation for aerobic respiration. Label reactants and products</p> <p>7. What is the relationship between photosynthesis and cellular respiration.</p>
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REVIEW GUIDE: Matter and Energy in Ecosystems and Population Growth

Chapters 13 & 14

State Standards- what the state says you need to know. Will be tested on the ACT test junior year.	Terms- vocabulary words from our unit that you need to know	Questions/Review- complete these review exercises to help you prepare for your quizzes, tests, etc. You should also review your labs, homework, journal, and other class activities.
B2.1a Explain how cells transform energy (ultimately obtained from the sun) from one form to another through the processes of photosynthesis and respiration. Identify the reactants and products in the general reaction of photosynthesis.	Chapter 13 13.1 Ecology Community Ecosystem Biome 13.2 Biotic Abiotic Biodiversity Keystone Species	1. How is energy stored in an ecosystem? 2a. Draw a 4 step food (energy) pyramid and label the following into the pyramid: producer; consumers; herbivores; carnivores; decomposers; trophic level.
B2.1b Compare and contrast the transformation of matter and energy during photosynthesis and respiration.	13.3 Producer Autotroph Consumer Heterotroph Chemosynthesis	b. Why is the transfer of energy represented by a pyramid? (What happens to energy at each trophic level?)
B2.5c Describe how energy is transferred and transformed from the sun to energy-rich molecules during photosynthesis.	13.4 Food chain Carnivore Specialist Trophic Level Herbivore Omnivore Decomposer Generalist Food Web	3a. Draw 2 food chains that interact into a food web. (Use names of actual organisms)
B3.1d Explain how living organisms gain and use mass through the processes of photosynthesis and respiration		
B3.1e Write the chemical equation for photosynthesis and cellular respiration and explain in words what they mean.		
B3.1a Describe how organisms		

<p>acquire energy directly or indirectly from sunlight.</p> <p>B3.2a Identify how energy is stored in an ecosystem.</p> <p>B3.2b Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat.</p>	<p><u>13.5</u> Nitrogen Fixation</p> <p><u>13.6</u> Biomes Energy Pyramid</p> <p>Biodiversity Pioneer species Succession Primary succession Secondary succession</p>	<p>b. Label the following on your food web: producers, consumers, and decomposer.</p> <p>c. What would happen to the food web if one of the organisms was removed?</p>
<p>B3.2c Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed.</p> <p>B3.3a Use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy through trophic levels.</p> <p>B3.3b Describe environmental processes (e.g., the carbon and nitrogen cycles) and their role in processing matter crucial for sustaining life.</p> <p>B2.2g Propose how moving an organism to a new environment may</p>	<p>CHAPTER 14</p> <p>Population Population size Population density Dispersion Exponential growth curve Carrying capacity Density dependent factors Density independent factors</p>	<p>4a. How is carbon cycled through photosynthesis/cellular respiration?</p> <p>b. What is the importance of nitrogen fixation to an ecosystem?</p> <p>5. Why is the loss of habitat, resulting in the endangerment and extinction of species?</p>
<p>B2.2g Propose how moving an organism to a new environment may</p>		<p>6a. Describe how an ecosystem changes, naturally with time.</p>

<p>influence its ability to survive and predict the possible impact of this type of transfer.</p> <p>B3.4a Describe ecosystem stability. Understand that if a disaster such as flood or fire occurs, the damaged ecosystem is likely to recover in stages of succession that eventually result in a system similar to the original one.</p> <p>B3.5a Graph changes in population growth given a data table.</p> <p>B3.5b Explain the influences that affect population growth.</p> <p>B3.5e Recognize that and describe how the physical or chemical environment may influence the rate, extent, and nature of population dynamics.</p> <p>B3.5c Predict the consequences of an invading organism on the survival of other organisms.</p> <p>B3.5f Graph an example of exponential growth. Then show the population leveling off at the carrying capacity of the environment.</p>			<p>b. Relate how gardening or agriculture affects succession.</p> <p>7. Be sure to understand the data and graph from the duckweed lab.</p> <p>8. Name at least 5 factors which can affect population growth and how it may affect the growth of the population.</p> <p>9. How may an invading organism affect the survival of other organisms?</p> <p>10. Draw a growth curve that shows exponential growth that levels off at the carrying capacity of the environment. Be sure to label the exponential portion and the carrying capacity.</p>
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REVIEW GUIDE: Chapter 16 Human Impact on Ecosystems

<p>State Standards- what the state says you need to know. Will be tested on the ACT test junior year.</p>	<p>Terms- vocabulary words from our unit that you need to know</p>	<p>Questions/Review- complete these review exercises to help you prepare for your quizzes, tests, etc. You should also review your labs, homework, journal, and other class activities.</p>
<p><u>B3.4C</u> Examine the negative impact of human activities.</p> <p><u>B3.4D</u> Describe the green house effect and list the possible causes.</p> <p><u>B3.4E</u> List the possible causes and consequences of global warming.</p>	<p><u>CHAPTER 16.2</u> Pollution Smog Particulate Acid rain Greenhouse effect Global warming</p> <p><u>CHAPTER 16.3</u> Indicator species biomagnification</p> <p><u>CHAPTER 16.4</u> Habitat fragmentation Introduced species</p> <p><u>CHAPTER 16.5</u> Sustainable development Umbrella species</p>	<p>1a. What is acid rain?</p> <p>b. List two causes of acid rain.</p> <ul style="list-style-type: none"> • • <p>c. List two effects of acid rain.</p> <ul style="list-style-type: none"> • • <p>2. What are chlorofluorocarbons? Give two sources from which they come.</p> <ul style="list-style-type: none"> • • <p>3a. What is the greenhouse effect? Explain how it applies to our atmosphere.</p>

3b. Explain how the greenhouse effect of our atmosphere contributes to global warming and destruction of our ozone layer.

4. What causes ozone layer depletion? Explain how depletion of our ozone layer will affect us negatively.

5. List four sources of green house gases.

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6. What is the difference between indicator, introduced, and umbrella species? Give an example of each.

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