

Final Exam Study Tips for Biology 400

The Biology 400 Final exam will consist of approximately 75 multiple choice questions. The students will take the test on a scantron. Each final exam period is 90 minutes long and students will get the entire time if needed to take the final.

Taking the exam will be a more positive experience if you study the following objectives. Chapter numbers are given for many objectives and the number of questions covering each section is listed next to each chapter/unit. Be sure you set aside time in a quiet place where you can concentrate and study most effectively. You should also study concept maps, past quizzes, worksheets and lab reports you used this semester. Start studying well in advance of the test. I read that spending 12 minutes, two times a day, seriously reviewing the material works well. Studying with a group is an excellent idea. Do your best so that you can feel proud about your efforts.

Topics/Units to be Covered:

- *Scientific Inquiry and Methods of Science (Prologue)*
- *Basic Biochemistry (Chapter 1)*
- *Organic Biochemistry (Chapter 1)*
- *Thermodynamics, Energy, and Organisms (Chapter 2)*
- *Microscopy*
- *Exploring the Cellular Basis of Life (Chapter 6)*
- *Photosynthesis (Chapter 4)*

Items that students need to study:

- Learning targets for each topic above
- Learning targets created **specifically BY YOUR TEACHER for the final exam**
- Review and make corrections to old quizzes
- Any assigned activities from packets
- Any notes that you have taken throughout the semester
- The ScreenCasts for each major topic are available at the dgsbio400 YouTube Channel

Things to study specifically for each unit:

- **Scientific Inquiry and Methods of Science**
 - State and describe the steps in the scientific method.
 - Apply the scientific method to a given situation.
 - Define and identify a scientific variable and explain its importance in an experiment.
 - Compare an experimental set-up with a control set-up.
 - Interpret graphs to answer questions.
 - Distinguish between a hypothesis and a theory.
- **Basic Biochemistry**
 - Explain the relationship between atoms, elements, molecules, and compounds.
 - Describe the chemical make-up of living things.
 - Interpret a chemical formula.
 - Describe the particles that make up an atom, and describe how they interact.
 - Interpret a chemical equation.
 - Explain polarity and why the polar nature of water makes it a biologically important molecule.
 - Distinguish between the ionic, covalent, and hydrogen bonding.
- **Organic Biochemistry**
 - List the most abundant elements found in living things.
 - Define organic compounds.
 - Explain the primary importance of carbohydrates to living organisms.
 - Describe the relationship between monosaccharides, disaccharides, and polysaccharides.
 - Explain the biological importance of lipids.
 - Describe the chemical composition of lipids.
 - Explain several roles of proteins in living things.
 - Describe the components of an amino acid, and explain how polypeptides form.
 - Define the role of nucleic acids in biology.
 - Distinguish between DNA and RNA.
 - Identify the components of nucleotides.
 - Identify each of the 4 organic compounds from its structural formula

- **Thermodynamics, Energy, and Organisms**
 - Define enzymes, and explain how enzymes help to accelerate chemical reactions.
 - Describe the relationship between that active site of an enzyme and substrate.
 - Explain enzyme specificity.
 - Describe the function and characteristics of enzymes and explain how they work.
 - Describe factors that affect the activity of enzymes.
 - Discuss the role of ATP in the cells of organisms.
- **Exploring the Cellular Basis of Life**
 - Define "cell".
 - State the cell theory.
 - Name and describe the structures common to all eukaryotic cells. Differentiate between prokaryotic and eukaryotic cells.
 - Define organelle.
 - Compare the **functions** of the mitochondria, chloroplasts, ribosomes, vacuoles, Golgi bodies, and the endoplasmic reticulum.
 - Distinguish between animal & plant cells in terms of presence or absence organelles.
 - Describe the characteristics (structures) AND functions of cell membranes. Discuss how these characteristics influence the type of molecules that can pass through the membrane and what transport processes each type of molecule must use.
 - Compare and contrast passive and active transport including diffusion, osmosis, facilitated diffusion, endocytosis (including 2 types), exocytosis, and ion pumps.
 - Explain the relationship between hypertonic, hypotonic, and isotonic.
 - Compare and contrast plasmolysis and turgor pressure.
 - Explain the impact of increases surface area on rates of diffusion and relate this concept to why cells must be small.
- **Microscopy**
 - Compare the field of view under low and high powers, by describing the amount of area seen under a compound light microscope.
 - Calculate total magnification when using each objective lens on a microscope.
 - Describe the procedure for locating an object under low and high power.
- **Photosynthesis**
 - List the products of photosynthesis
 - What are the optimal wavelengths (colors) of the visible spectrum for photosynthesis production?
 - What is the equation that represents photosynthesis?
 - What is the most important result of photosynthesis?
 - Where does the oxygen that is released from photosynthesis originate?
 - List all the products of the light reaction?
 - What chemical substances are required for the production of glucose in the Calvin Cycle?
 - How does light intensity affect photosynthesis?
 - What other factors affect changes on photosynthesis?

Helpful Test Taking Tips:

- Pay attention to study sessions that your teacher may offer during class time prior to the final exam. It is possible that your instructor may offer tips and hints about the exam during these study sessions.
- Take notes and ask questions about items you may be confused about.
- Eat a good breakfast before the test. Having food in your stomach will give you energy and help you focus but avoid heavy foods which can make you groggy.
- Get at least 8 hours of sleep before the test, so that you'll be well rested enough to focus during the test
- Make sure you bring several #2 pencils and an eraser for the test.

Good work....not Good Luck!

Final Exam Study Tips for Biology 300 and Integrated Studies Biology 300

The Biology 300 Final exam will consist of approximately 90 multiple choice questions. The students will take the test on a scantron. Each final exam period is 90 minutes long and students will get the entire time if needed to take the final.

Topics/Units to be Covered:

- *Characteristics of Life*
- *Microscopes*
- *Scientific Method*
- *Cells and Transport, including carbohydrates*
- *DNA structure and function, including nucleic acids*
- *Mitosis*

Items that students need to study:

- Learning targets for each topic above
- Learning targets created **specifically BY YOUR TEACHER for the final exam**
- Review and make corrections to old quizzes
- Vocabulary in Reading for Meaning worksheets
- Any Active and Direct Readings from packets
- Any notes that you have taken throughout the semester

Things to study specifically for each unit:

- **Characteristics of Life**
 - Know all characteristics of life and examples of each
 - Metric system
 - Reading and interpreting graphs
- **Microscopes**
 - Steps for focusing the microscope
 - Calculate total magnification
 - Location, parts and functions of microscope
 - Differences in field of view based on power
 - Orientation of images under microscope
- **Scientific Method**
 - Know the steps in order
 - Given an experiment, be able to identify parts of the scientific method
 - Difference between experimental and control group
 - Dependent and Independent Variables

- **Cells and Transport, including carbohydrates**
 - Cell theory
 - Surface area, size and efficiency of a cell
 - Differences between eukaryotic and prokaryotic cells
 - What a cell membrane consists of and the function
 - Location of cell organelles and their functions
 - Differences between a plant, animal and bacterial cell
 - Sequence of levels of organization
 - Diffusion osmosis, passive and active transport
- **DNA structure and function, including nucleic acids**
 - Function of DNA
 - Steps of replication
 - Nitrogen base sequences
- **Mitosis**
 - Know the Cell Cycle in order and be able to identify it at different phases
 - Purpose of each of the phases of the cell cycle

Helpful Test Taking Tips:

- Pay attention to study sessions that your teacher may offer during class time prior to the final exam. It is possible that your instructor may offer tips and hints about the exam during these study sessions.
- Take notes and ask questions about items you may be confused about.
- Eat a good breakfast before the test. Having food in your stomach will give you energy and help you focus but avoid heavy foods which can make you groggy.
- Get at least 8 hours of sleep before the test, so that you'll be well rested enough to focus during the test
- Make sure you bring several #2 pencils and an eraser for the test.

Good work....not Good Luck!

Below is a list of concepts or objectives/learning targets, all of which will be addressed by one or more questions on the semester final exam. Study a little at a time, early and often...don't cram! Get a good night's sleep and have a good breakfast before testing. Good Luck on exams!

Fundamentals, Characteristics of Living Things

1. Identify what all living things need to survive.
2. List and describe the characteristics of all living things share.
3. Identify where a living thing originated.
4. Name and describe the steps of the scientific method. (notes)
5. Apply the steps of the scientific method to a controlled experiment. (notes and lab).
6. Identify the use of a graph and correctly use one to analyze data. (lab)
7. Identify the metric measurement for temperature and length and use the appropriate tool to measure temperature and length. (lab)
8. Define biology.

Microscopes

1. Identify the parts of the light microscope on both a diagram and the actual microscope.
2. Explain the function of each part of the microscope.
3. Explain why the microscope we use in class is called a compound light microscope.
4. Explain how to properly use the light microscope to observe a specimen under low and high power.
5. Calculate the total magnification of a microscope under low and high power.
6. Compare low versus high power in terms of size of the field of view, magnification and depth of field.
7. Compare a light microscope with an electron microscope.
8. Explain the difference between a prepared slide and a temporary wet mount slide.
9. Explain how to prepare a wet mount slide both with and without the use of a stain.
10. Explain the proper procedure to carry and store the light microscope.

Bacteria, Viruses & Infectious Diseases

1. List the reasons why viruses are not considered living.
2. Describe the basic structure of a virus.
3. Explain how viruses multiple.
4. Describe the difference between active viruses and hidden viruses.
5. Describe and draw the three shapes of bacteria cells
6. Describe, draw and label the cell structures of a bacterial cell.
7. Describe ways in which bacteria cells are different from all other organisms' cells.
8. Name and describe the two kingdoms of bacteria
9. Describe two easy ways in which bacteria can reproduce.
10. Discuss three survival needs of bacteria.
11. List and discuss four possible roles that bacteria play in human life.
12. Describe an infectious disease.
13. Explain four ways in which infectious diseases can spread.
14. Discuss causes for infectious diseases.
15. Describe ways in which infectious diseases can be treated.
16. Explain how vaccinations help prevent infectious diseases.
17. List everyday ways individuals can prevent infectious diseases.
18. Define all keywords for chapter 2.

Cell Theory, Cell Structures/Functions, Cell Transport

1. Explain how the invention of the microscope contributed to the understanding of living things.
2. state the three points of the cell theory.
3. Identify from a diagram the basic cell parts (organelles) and give their functions.
4. Compare bacterial cells with plant and animal cells.
5. Describe the role of specialized cells in many-celled organisms.
6. Describe the three methods by which substances move into and out of cells.
7. Compare passive and active transport and give example(s) of each.
8. Define key words from C1-1,2,3.

Cell Cycle, DNA Structure & Replication

1. Describe the relationship between photosynthesis and respiration.
2. List the events that take place during the three parts of the cell cycle (interphase, mitosis, and cytokinesis).
3. Draw and describe a cell going through the phases of mitosis (PMAT).
4. Explain what happens to the number of chromosomes during the cell cycle.
5. Describe the structure of DNA, including the substances that make the uprights (sides) of the ladder, the four nitrogen bases, and how they pair.
6. Describe how DNA replicates.
7. State the relationship between cancer and the cell cycle.
8. Define key words from C2-2,3,4.

Final Exam Study Tips for Earth Science 200

The Earth Science Final exam will consist of approximately 75 multiple choice questions. The students will take the test on a scantron. Each final exam period is 90 minutes long and students will get the entire time if needed to take the final.

Taking the exam will be a more positive experience if you study the following objectives. Chapter numbers are given for many objectives and the number of questions covering each section is listed next to each chapter/unit. Be sure you set aside time in a quiet place where you can concentrate and study most effectively. You should also study, past quizzes, worksheets and lab reports, and especially

Semester Review notes by your teacher used this semester. Start studying well in advance of the test. I read that spending 20 each day, seriously reviewing the material works well. . Do your best so that you can feel proud about your efforts.

Topics/Units to be Covered:

- *Scientific Inquiry and Methods*
- *Chapter 15,16,17 & 18 (Meteorology)*

Study specifically for each unit:

- **Scientific Inquiry and Methods of Science**
 - State and describe the steps in the scientific method.
 - Compare an experimental set-up with a control set-up.
 - Interpret graphs to answer questions.
- **The Atmosphere**
 - Air
 - Composition of the atmosphere
 - Air quality
 - Acid rain
 - Air pressure
 - Measuring air pressure
 - Tools for measuring air pressure
 - Layers of the atmosphere

Weather Factors.

- Energy in the atmosphere
 - Heat transfer
 - Measurement of wind , speed direction
 - Global wind patterns
 - Water in the atmosphere
 - Cloud types
 - Formation of clouds
 - Weather patterns
 - Air masses and fronts
 - Warm fronts
 - Cold fronts
 - Thunderstorms
 - Lighting
 - Tornadoes
 - Hurricanes
- **Climate**
 - Factors affecting climate
 - Factors affecting precipitation

Helpful Test Taking Tips:

- Pay attention to study sessions that your teacher may offer during class time prior to the final exam. It is possible that your instructor may offer tips and hints about the exam during these study sessions.
- Try Picture Notes!
 - Fold a sheet of paper 3x into 16 squares.
 - In each square, write a vocabulary word from the semester.
 - With the word include the following:
 - Definition
 - Example
 - Diagram (where appropriate)
 - Page # you found this term in your text
- Make sure you bring several #2 pencils and an eraser for the test.

Good work....not Good Luck!

Final Exam Study Tips for Chemistry 400

1. Use Final Exam Target list to create the question portion of two column notes.
2. Use your notes, textbook, worksheets, and labs to fill in the answer portion of the two column notes.
3. Find practice problems, in the textbook and/or worksheets that correspond with learning targets that involve calculations. Cover up your previous work and try to complete the work again. Use your previous work to check your current work. Continue until you have mastered the target.
4. Memorize:
 - a. common element names and symbols found on p. 51 of your textbook.
 - b. polyatomic ions names and formulas (found on the back of your yellow periodic table).
5. After all of the above is completed, bring specific questions to your teacher for help.

Final Exam Study Tips for Chem-is-TRY 300

1. Do not procrastinate. Seek help immediately if you do not understand a concept.
2. Study Chemistry daily: 15-20 minutes a day even if there is not homework to ensure understanding.
3. Organize semester materials into proper units so that you can study the information.
4. Read and study all power point and classroom notes.
5. Take advantage of the web. View videos/lectures/labs provided via the internet to enhance you understanding of the unit concepts.
6. Look over the unit/semester learning targets and assess yourself on understanding. For the targets you are struggling with: set-up a learning plan, which can include additional help, re-doing assignments, reviewing quizzes/tests etc.
7. Make note cards for vocabulary words, equations, concepts. Use www.quizlet.com to make cards online, search the database for sets of cards related to chemistry. This site may also be useful for other subjects.
8. Complete the Chemistry 300 final review packet at least a week or two before final exam. Seek extra help if needed.
9. Form a study group and meet regularly to go over Chemistry concepts.

Final Exam Study Tips for I.S. Physical Science 300

1. Complete the Final Exam Review Packet
2. Find all Unit Packets
 - a. Review the Practice Tests at the end of each unit packet – cover your work and try them again. Use your previous work to check your answers.
 - b. Review Learning Target Lists and Unit Cover Sheets at the beginning of each unit packet
 - c. Review notes and worksheets in unit packets. For worksheets involving mathematical calculations, cover your work and try the calculations again.
3. Review Quizzes and Tests from each unit
4. Ask the teacher if you have questions

Final Exam Study Tips for Physical Science 200

Final Exam Do & Don'ts:

DO:

1. *Get plenty of rest before your tests!*
2. *Plan ahead!*
3. *Bring several #2 pencils (sharpened) & Calculator!*
4. *Bring something to do when finished!*
5. *Bring a water bottle (screw top only)!*

Don't:

1. *Pull an "All Nighter"!*
2. *Cram!*
3. *No pens allowed!*
4. *No electronic devices allowed!*
5. *No food or open top drink containers!*

Looking back over the first semester, we've learned a great deal of Physical Science. Studying for a comprehensive final exam may seem to be a daunting task, but by knowing exactly what you'll be assessed on the process can be simplified. If you study your learning targets, class note for the all 4 units, and review the following topics you'll do a great job on the exam! Remember, the final exam counts as 20% of your semester grade, so it's very important that you prepare yourself so that you can be successful. Some exam questions may include more than one learning target. Some learning targets may apply to multiple questions. There are a total of 85 multiple choice questions on the final exam. Use this list to help you study for the Physical Science 200 Semester 1 Final Exam.

Things to study specifically for each unit:

(All Semester 1 material is referenced in Book M-Motion, Forces, and Energy)

A. Practicing Science Skills (pages 202-217)

- Standards of measurement/Metric System
- Measuring length, mass, volume, temperature, & time
- Scientific Investigation
- Data tables/Graphing

B. Speed & Acceleration 1.1 & 1.3 (pages 14-41)

- Motion/Reference Point
- Solving Speed math problems
- Solving Acceleration math problems
- Interpret Motion graphs
- Interpret Acceleration graphs
- Calculate the slope of a line

C. Forces 2.1, 2.2, 2.3, 2.4, 2.5 (pages 42-75)

- Define force (balanced & unbalanced)
- Newton's 1st, 2nd, & 3rd Laws of Motion
- Force, mass, acceleration math problems
- Friction & Gravity
- Momentum

D. Energy, Power & Work 5.1, 5.2, 5.4 (pages 138-165)

- Types of Energy
- Kinetic Energy vs. Potential Energy
- Measure Power & Work

General guidelines:

- Minimize distractions. No phones, computers, friends, etc.
- You must study actively. Study with a pencil in your hand and notes and calculator by your side.

Two weeks prior to the exam

- Start with the material from the beginning of the semester and work your way towards the more recent material. In the next week, divide your chapters or units covered so that all the units EXCEPT the most current unit are all given equal attention. If you had problems that were never addressed, this is the time to come in for help! If you feel like you are pretty good at working certain problems or you feel as though you have a solid understanding of certain concepts, do not continue to review those topics. Separate out material with which you struggle or you need to give extra attention. Create a section in your notebook ("*Finals Study Notes*") for this specific material and begin to work problems, writing notes to yourself about how these problems are completed and why they are done in a certain way. Any organizational strategies you can use for this is a plus!
- Look at old quizzes and problem sets. Cover up the answers to old worksheets, problem sets or quiz questions that proved difficult in the past, and re do them. If you feel like you are getting the correct answers but working too slowly, work through additional problems until you get through them more quickly. Just like an athlete working specific muscles to improve their performance, you are doing the same with your brain!!
- Create flow-charts/mind-maps that connect each of the topics from each unit together. Even better, connect each unit's flow chart to another unit's.

A week prior to the exam

- Complete the Semester Review given by your teacher.
- Study the most recent unit, using the techniques above.
- Focus on topics that you have isolated in your "*Finals Study Notes*" that you have identified as being challenging. You have a week to come in and get help! Get help from teachers, tutors, classmates or even physics help websites.

The night before/morning of the exam

- Get a good night's sleep. Don't cram all night – you will be too tired and confused to remember anything if you do this and you risk making silly mistakes. Eat a healthy breakfast. If you normally don't drink coffee, don't start now. Same thing with energy drinks such as Red Bull.

Taking the exam

You've heard it all before. It's mostly common sense but here it is anyway...

- Use the process of elimination: Omit certain answers so you have better odds at getting the correct answer even if you are not sure.
- If you are taking too long on a problem or get stuck – come back to it.
- Read carefully! If you are unsure of what a question is asking, ask yourself clarifying questions.
- If an answer is numerical, make sure the answer makes sense. For example, speed of a boy running = 435 kilometers/second? No – that would be impossible!

General guidelines:

- Minimize distractions. No phones, computers, friends, etc.
- You must study actively. Study with a pencil in your hand and notes and calculator by your side.

Two weeks prior to the exam

- Start with the material from the beginning of the semester and work your way towards the more recent material. In the next week, divide your chapters or units covered so that all the units EXCEPT the most current unit are all given equal attention. If you had problems that were never addressed, this is the time to come in for help! If you feel like you are pretty good at working certain problems or you feel as though you have a solid understanding of certain concepts, do not continue to review those topics. Separate out material with which you struggle or you need to give extra attention. Create a section in your notebook ("*Finals Study Notes*") for this specific material and begin to work problems, writing notes to yourself about how these problems are completed and why they are done in a certain way. Any organizational strategies you can use for this is a plus!
- Look at old quizzes and problem sets. Cover up the answers to old worksheets, problem sets or quiz questions that proved difficult in the past, and re do them. If you feel like you are getting the correct answers but working too slowly, work through additional problems until you get through them more quickly. Just like an athlete working specific muscles to improve their performance, you are doing the same with your brain!!
- Create flow-charts/mind-maps that connect each of the topics from each unit together. Even better, connect each unit's flow chart to another unit's.

A week prior to the exam

- Complete the Semester Review given by your teacher.
- Study the most recent unit, using the techniques above.
- Focus on topics that you have isolated in your "*Finals Study Notes*" that you have identified as being challenging. You have a week to come in and get help! Get help from teachers, tutors, classmates or even physics help websites.

The night before/morning of the exam

- Get a good night's sleep. Don't cram all night – you will be too tired and confused to remember anything if you do this and you risk making silly mistakes. Eat a healthy breakfast. If you normally don't drink coffee, don't start now. Same thing with energy drinks such as Red Bull.

Taking the exam

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- Read carefully! If you are unsure of what a question is asking, ask yourself clarifying questions.
- If an answer is numerical, make sure the answer makes sense. For example, speed of a boy running = 435 kilometers/second? No – that would be impossible!

CHAPTER 1 (Introduction)

DIRECTIONAL TERMS

Body cavities (a basic & specific)
Planes (3) of the body
Correct anatomical position
Nine abdominopelvic regions
Levels of organization
Body systems (descriptions)
Homeostasis
Radiology
Regions of the body
Def. of Anatomy & Physiology
Histology
Body surfaces
Organs and body structures

Chapter 2 (Chemistry)

Basic atomic structure
Subatomic particles/location, charges
Chemical bonding (electrons)
Atomic number and mass
Number of electrons
Characteristics of water
Nucleic acids (DNA/RNA)
DNA /RNA basic structure
RNA types (3) structure/functions
Chemical bonding (3)
Role of Carbohydrates, Lipids, Proteins
Metabolism (2 types of reactions)
Human body – common elements
pH scale, weak & strong acids and bases
feedback systems (2)
ions (2)

Chapter 3 (Cytology)

Cell division (mitosis/meiosis)
Mitosis – phases (4)
Types of Transport (2) passive/active
Cell membrane-structure/ function
Solutions (3) types
Cell organelles – functions
DNA & Protein synthesis
Types of RNA (3) – structures
Transcription/Translation

Chapter 4 (Histology)

Cell types – structure/function
Basic tissue types-descriptions
Specific tissue types/functions
Glandular epithelium - struct./function
Membranes of body (4)
Connective tissue types
Cartilage types (3) functions/locations

Chapter 5 (integumentary)

Skin structures, basic facts
skin functions - layers
Skin layers - epidermis, dermis
Skin glands (3)
Types of burns (3)
Skin cancers (3)
Skin pigments/waterproofing
Skin diseases

Chapter (6-9) (osseous tissue/joints)

Specific bones
Groups of bones(cranial, facial)
bone numbers (206 etc.)
divisions of skeleton (2)
Harversian systems (osteons)
Bone types (compact/spongy)
Bone cell types (4) functions
Joints of the body (types)
Types of bones
body movements(joints)
anatomy of a long bone
bone markings/features/sutures
Vertebrae types
Ossification(2)

Final Exam Study Tips for Biology II: Advanced Research Topics in Biology

1. Read and understand the Inquiry Based Research Packet.
2. Review all comments on the papers that your teacher has returned to you.
3. Be able to write a correct APA style citation for web based content. (Noodlebib and Citation Machine are available during the test.
4. Be able to use Microsoft word to write and correctly format a research paper.

Final Exam Study Tips for Research Topics In Earth Science

- I. Read and understand the Inquiry Based Research Packet.
- II. Review all comments on the papers that your teacher has returned to you.
- III. Be able to write a correct APA style citation for web based content. (Noodlebib and Citation Machine are available during the test.
- IV. Be able to use Microsoft word to write and correctly format a research paper.

Final Exam Study Tips for Advanced Placement Biology

The AP Biology Final exam will consist of approximately 100 multiple choice questions taken from a variety of sources including released and retired AP Biology Exams. The students will take the test on a scantron. Each final exam period is 90 minutes long and students will get the entire time if needed to take the final.

Topics/Units to be Covered

NOTE-diagrams will be on the test-there will be NO essays on the exam-there is NO AP curve for the exam

- *Ecology-chp 50-54*
- *Cell structure and Function-chp 7-8*
- *Cellular energetics-cellular respiration, photosynthesis and enzymes-chp 9-10; chp 6*
- *Macromolecules-structure, function-chp 4-5*
- *Functional groups-chp 4*
- *Properties of water-chp 3*
- *The cell cycle and cell communication-chp 11-12*
- *Genetics-chp 13-15*
- *DNA structure and Function-chp 16-17*
- *The Kidney-chp 44*

Items that students need to study:

- ***Learning targets for each topic above***
- ***Top 10 lists***
- Vocabulary booklets
- Reading guides
- ***All notes that you have taken throughout the semester***
- ***Lab reports***
- Case Studies
- ***Review screencasts***
- Attend study sessions for Final Exam (times to be determined)

Helpful Test Taking Tips:

- Go to study sessions, pay attention to hints that the instructor may give about the test.
- Take notes ***AND ASK QUESTIONS*** about items you may be confused about.
- Eat a good breakfast before the test. Having food in your stomach will give you energy and help you focus but avoid heavy foods which can make you groggy.
- Get at least 8 hours of sleep before the test, so that you'll be well rested enough to focus during the test
- Make sure you bring several #2 pencils and an eraser for the test.

Two weeks prior to the exam

Start with the material from the beginning of the semester and work your way towards the more recent material. In the next week, divide your chapters or units covered so that all the units EXCEPT the most current unit are all given equal attention. If you had problems that were never addressed, this is the time to come in for help! If you feel like you are pretty good at working certain problems or you feel as though you have a solid understanding of certain concepts, do not continue to review those topics. Separate out material with which you struggle or you need to give extra attention. Create a section in your notebook ("*Finals Study Notes*") for this specific material and begin to work problems, writing notes to yourself about how these are problems are completed and why they are done in a certain way. Any organizational strategies you can use for this is a plus!

Look at old quizzes and problem sets. Rework old problem sets or quiz questions that proved difficult in the past. If you feel like you are getting the correct answers but working too slowly, work through additional problems until you get through them more quickly. Just like an athlete working specific muscles to improve their performance, you are doing the same with your brain!!

Working with a Group

If working with a study group 1.) PUT AWAY THE PHONES!!! (Thank you) 2.) Have an organized game plan: What will you study? Everything?...Not in one session! Take one unit at a time. 3.) Decide which problems were important and have the entire group work the same problems. The person who understands them well can explain them to the rest of the group. 4.) Study groups are great when it comes to quizzing one another – try quizzing each other on things that one needs to memorize such as ions names and charges or molecular geometries. 5.) Lastly, time is precious – if the group study session starts to deteriorate, just politely excuse yourself and go home to study. There's lot's of time to socialize after the exam is done!

A week prior to the exam

Only work through topics that you have isolated in your "*Finals Study Notes*" that you have identified as being challenging. The exam will look like tests and quizzes except all questions will be multiple choice. You have a week to come in and get help! Get help from teachers, tutors, classmates or even chem help websites.

The night before/morning of the exam

Check your calculator batteries in case you need a quick run to the store for replacements (it's not bad to have replacements on hand anyway OR a back-up calculator.) Don't eat bizarre foods for dinner that will make you want to run to the bathroom every five minutes during the test. Get a good night's sleep. Don't cram all night – you will be too tired and confused to remember anything if you do this and you risk making silly mistakes. Eat a healthy breakfast. If you normally don't drink coffee, don't start now. Same thing with energy drinks such as Red Bull. Wear comfortable clothes - but not too comfortable! You don't want to start feeling self-conscious midway through exam day. If you get hungry, bring something small but something that will last – energy bars, peanut butter, something with some protein. Stay away from anything with too much sugar.

Taking the exam

You've heard it all before. It's mostly common sense but here it is anyway...

- 1.) It's multiple choice! – answer every question even if you don't know the answer.
- 2.) You can usually omit certain answers so you have better odds at getting the correct answer even if you are not sure.
- 3.) If you are taking too long on a problem or get stuck – come back to it. Dog ear the page on the test and circle the question so you know you need to revisit the page/question.
- 4.) As you read through an entire test, sometimes, information in other questions will jog your memory and help with other questions.
- 5.) Quite often, you can actually find answers to questions within other questions.
- 6.) Read carefully! If you are unsure of what a question is asking, ask me! I can't give you answers but I can certainly clarify questions.
- 7.) Flip through pages to make sure you have answered ALL the questions. Students are often in a hurry and sometimes skip a back page. When they realize later, they are not too happy with themselves.
- 8.) If an answer is numerical, make sure the answer makes sense. For example, 6.02×10^{23} moles??? No – that would be a more appropriate answer for atoms!
- 9.) Have you checked to insure reactions are balanced when doing a stoich problem? Are you balancing a redox in acid or base? Have you charge and mass balanced?
- 10.) Lastly – if you are wavering between two answers, your first choice is usually the best!

And when it's done – turn it in – move on – don't stress. Concentrate on what's next. Breathe. This is only a snapshot in time – not the rest of your life.

Final Exam Study Tips for Advanced Placement Physics

General guidelines:

- Minimize distractions. No phones, computers, friends, etc.
- You must study actively. Study with a pencil in your hand and notes and calculator by your side.

Two weeks prior to the exam

- Start with the material from the beginning of the semester and work your way towards the more recent material. In the next week, divide your chapters or units covered so that all the units EXCEPT the most current unit are all given equal attention. If you had problems that were never addressed, this is the time to come in for help! If you feel like you are pretty good at working certain problems or you feel as though you have a solid understanding of certain concepts, do not continue to review those topics. Separate out material with which you struggle or you need to give extra attention. Create a section in your notebook ("*Finals Study Notes*") for this specific material and begin to work problems, writing notes to yourself about how these problems are completed and why they are done in a certain way. Any organizational strategies you can use for this is a plus!
- Look at old quizzes and problem sets. Cover up the answers to old worksheets, problem sets or quiz questions that proved difficult in the past, and re do them. If you feel like you are getting the correct answers but working too slowly, work through additional problems until you get through them more quickly. Just like an athlete working specific muscles to improve their performance, you are doing the same with your brain!!
- Create flow-charts/mind-maps that connect each of the topics from each unit together. Even better, connect each unit's flow chart to another unit's.

A week prior to the exam

- Complete the Semester Review given by your teacher.
- Study the most recent unit, using the techniques above.
- Focus on topics that you have isolated in your "*Finals Study Notes*" that you have identified as being challenging. You have a week to come in and get help! Get help from teachers, tutors, classmates or even physics help websites.

The night before/morning of the exam

- Get a good night's sleep. Don't cram all night – you will be too tired and confused to remember anything if you do this and you risk making silly mistakes. Eat a healthy breakfast. If you normally don't drink coffee, don't start now. Same thing with energy drinks such as Red Bull.

Taking the exam

You've heard it all before. It's mostly common sense but here it is anyway...

- Use the process of elimination: Omit certain answers so you have better odds at getting the correct answer even if you are not sure.
- If you are taking too long on a problem or get stuck – come back to it.
- Read carefully! If you are unsure of what a question is asking, ask yourself clarifying questions.
- If an answer is numerical, make sure the answer makes sense. For example, speed of a boy running = 435 kilometers/second? No – that would be impossible!