Earth Science Written Final Exam Study Guide

EES
Final Exam MSL Review Guide

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M.Sewell 812J

Earth & Environmental Science Final Exam Study Guide

Astronomy – 1.1

1. 1.1.1 What does the geocentric model of the solar system look like?
2. 1.1.1 What is the theory that the Solar System developed from a cloud of dust and gas?
3. 1.1.1 At what point is Earth closest to the sun?
4. 1.1.1 What are the Jovian planets vs terrestrial?
5. 1.1.2 What is responsible for the seasonal changes on earth?
6. 1.1.2 What causes the earth to experience tides?
7. 1.1.2 What causes earth to experience days and years?
8. 1.1.2 Why is the circumference of the earth larger at the equator then the poles?
9. 1.1.3 What is fusion?
10. 1.1.3 What is fission?
11. 1.1.3 What process produces radiant energy in stars?
12. 1.1.4 What causes the differential heating of Earth's surface (differences in land and water)?
13. 1.1.3 Explain how photosynthesis works.

Lithosphere – Rocks & Soils 2.1

1. 2.1.1 What are the three types of rock?
2. 2.1.1 What are the two types of energy that drive the Earth's rock cycle?
3. 2.1.1 What rock is formed when magma hardens beneath the Earth's surface?
4. 2.1.1 What is the classification of a rock that is formed by cooling lava?
5. 2.1.1 List in order the processes that form sedimentary rock.
6. 2.1.2 What is the difference between a soil map and a geologic map and how are each useful?
7. List the process that forms coal or oil, and note the differences between the two?
8. Where would one usually find the oldest sedimentary rock, near the surface or deeper down?
9. What is the make-up by percentage of the average soil?
10. 2.1.3 List the sequence of soil formation.

Lithosphere - Plate Tectonics 2.1

1. 2.1.1 How did Wegener's Continental Drift **Hypothesis** get elevated to today's Plate **Tectonics Theory**?
2. 2.1.1 What is the name for the supercontinent in the continental drift hypothesis?
3. 2.1.1 Why do we have mountains on Earth?
4. 2.1.1What is the significance of the asthenosphere having a putty consistency?
5. 2.1.1What kind of plate boundary occurs where two plates grid past each other without destroying or producing lithosphere
6. 2.1.1 What type of boundary occurs where two plates move together, causing one plate to descend in the mantle beneath the other plate?
7. 2.1.1 Where is new oceanic crust formed?
8. 2.1.1 What forms when one oceanic plate is forced beneath another plate?
9. 2.1.1 What boundary destroys oceanic lithosphere?
10. 2.1.1 What provides the energy for plate tectonics?

Earth science written final exam study guide is an essential resource for students preparing for their comprehensive assessments in this dynamic field. Earth science encompasses various disciplines, including geology, meteorology, oceanography, and environmental science. A thorough understanding of these areas is crucial for success in your final exam. This study guide will provide an overview of key topics, concepts, and strategies to help you prepare effectively.

Understanding Earth Science

Earth science is the study of the Earth, its structure, processes, and the interactions between its various systems. It is divided into several branches, each focusing on different aspects of the Earth

and its environment.

Branches of Earth Science

1. Geology: The study of the Earth's solid materials, including rocks, minerals, and the processes that shape the Earth's structure over time.
2. Meteorology: The study of the atmosphere and weather phenomena, focusing on the processes that drive weather patterns and climate.
3. Oceanography: The exploration of the ocean's physical, chemical, and biological properties, including ocean currents, marine ecosystems, and the ocean's role in global climate.
4. Environmental Science: The study of human interaction with the environment, focusing on issues such as pollution, conservation, and sustainability.

Key Topics to Study

To prepare for your final exam, it is essential to focus on the following key topics within each branch of Earth science.

Geology

- Rock Cycle: Understand the processes that transform igneous, sedimentary, and metamorphic rocks.
- Plate Tectonics: Study the movement of Earth's plates, including concepts like continental drift, subduction zones, and tectonic boundaries.
- Earthquakes and Volcanoes: Learn about the causes and effects of seismic activity, as well as the formation and eruption of volcanoes.
- Fossils and Geological Time: Familiarize yourself with the principles of stratigraphy, relative dating, and the significance of fossils in understanding Earth's history.

Meteorology

- Atmospheric Layers: Know the different layers of the atmosphere and their characteristics, such as the troposphere, stratosphere, and mesosphere.
- Weather Patterns: Study the formation of different weather systems, including fronts, cyclones, and anticyclones.
- Climate Change: Understand the causes and effects of climate change, including greenhouse gases, global warming, and its impact on ecosystems.
- Severe Weather: Be aware of various severe weather phenomena, such as hurricanes, tornadoes, and thunderstorms, and their associated risks.

Oceanography

- Ocean Currents: Learn about major ocean currents, their causes, and their influence on global climate.
- Marine Ecosystems: Understand the different types of marine ecosystems, such as coral reefs, estuaries, and deep-sea environments.
- Oceanic Processes: Study processes like upwelling, ocean acidification, and the carbon cycle's role within marine environments.
- Human Impact on Oceans: Familiarize yourself with issues like overfishing, pollution, and habitat destruction.

Environmental Science

- Ecosystems and Biodiversity: Understand the components of ecosystems, the importance of biodiversity, and the threats facing various species.
- Pollution: Learn about different types of pollution (air, water, soil) and their sources, effects, and mitigation strategies.
- Sustainability: Study the principles of sustainability, including renewable resources, conservation practices, and sustainable development.
- Climate Policy: Be aware of global efforts to combat climate change, such as the Paris Agreement and other international treaties.

Study Techniques

Effective study techniques can significantly enhance your preparation for the Earth science written final exam. Here are some strategies to consider:

Active Learning

- Practice Diagrams: Create and label diagrams to visualize complex processes (e.g., the rock cycle, ocean currents).
- Flashcards: Use flashcards for key terms and definitions to reinforce your memory.
- Group Study: Engage in group study sessions to discuss topics and quiz each other on important concepts.

Organized Notes

- Summaries: Summarize each chapter or topic in your own words to reinforce understanding.
- Outline: Create an outline of key points for each subject area, making it easier to review.
- Visual Aids: Use charts, graphs, and images to create visual connections between concepts.

Practice Exams

- Past Papers: Review past exam papers to familiarize yourself with the format and types of questions.
- Sample Questions: Create or find sample questions to test your knowledge and identify areas needing improvement.
- Time Management: Practice answering questions within a set time limit to improve your pacing for the actual exam.

Exam Day Preparation

As you approach the exam date, it’s crucial to implement effective strategies for the day of the test.

Rest and Nutrition

- Sleep: Ensure you get a good night's sleep before the exam to enhance focus and cognitive function.
- Healthy Meal: Eat a balanced meal to maintain energy levels during the test. Avoid heavy or sugary foods that may cause energy crashes.

Materials Checklist

Before heading to the exam, double-check that you have the following materials:

- Writing Instruments: Pens or pencils, along with a good eraser.
- Calculator: If permitted, ensure it’s charged and functioning.
- ID and Exam Ticket: Bring any identification or tickets required for entry into the exam room.

Exam Strategies

- Read Instructions Carefully: Take your time to understand the instructions for each section of the exam.
- Answer Easy Questions First: Start with questions you find easier, then return to more challenging ones later.
- Manage Your Time: Keep track of time to ensure you can complete all sections without rushing.

Conclusion

In conclusion, preparing for the Earth science written final exam requires a comprehensive understanding of key concepts across various branches of Earth science. By focusing on essential

topics, employing effective study techniques, and preparing adequately for exam day, you can enhance your chances of achieving a successful outcome. Remember to stay organized, practice actively, and maintain a positive mindset throughout your study process. Good luck with your exam preparation!

Frequently Asked Questions

What are the main branches of Earth Science covered in the final exam?

The main branches include geology, meteorology, oceanography, and environmental science.

How do plate tectonics influence geological formations?

Plate tectonics cause the movement of Earth's lithospheric plates, leading to the formation of mountains, earthquakes, and volcanic activity.

What is the rock cycle and why is it important?

The rock cycle describes the continuous process of rock formation, breakdown, and reformation, highlighting the interconnection between different rock types and Earth's systems.

What are the primary factors that influence climate?

The primary factors include latitude, altitude, proximity to water bodies, ocean currents, and prevailing winds.

Explain the greenhouse effect and its significance.

The greenhouse effect is the process by which certain gases trap heat in Earth's atmosphere, keeping the planet warm enough to support life; however, increased greenhouse gas emissions contribute to global warming.

What is the difference between weather and climate?

Weather refers to short-term atmospheric conditions in a specific area, while climate describes long-term average weather patterns over an extended period.

What role do oceans play in regulating Earth's climate?

Oceans absorb and store large amounts of heat and carbon dioxide, influencing global climate patterns and weather systems.

How can human activities impact Earth's systems?

Human activities such as deforestation, pollution, and fossil fuel combustion can disrupt natural processes, leading to climate change, loss of biodiversity, and ecosystem degradation.

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