Environmental Science Final Exam Review

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Explain the difference between a renewable and nonrenewable resource.

- A renewable resource is not being used up faster than it can be replaced. A nonrenewable resource is being depleted quicker than it can be replaced.
- A good use of a renewable resource is building wooden furniture.

Name 5 fields of study that are included in environmental science.

- Biology, Earth Science, Physics, Chemistry, Social Science

Compare and contrast the population growth for developed and developing countries.

- Developed country – stabilized or slowly growing, almost meeting replacement rate
- Developing country – Rapid growth, high infant mortality

What are the steps of the experimental method?

- Observing, hypothesizing, predicting, experimenting, analyzing data, drawing conclusions, repeating experiments, communicating results

What are the values included in the decision making process?

- Aesthetic – what is beautiful
- Economic – financial…spending, saving, and jobs
- Environmental
- Educational
- Ethical / moral
- Health
- Recreational – enjoying the outdoors…boating
- Scientific
- Social / cultural

How do mountains form?

- Colliding tectonic plates

Name two organisms that produce oxygen.

- Any plants – trees, shrubs

What do you call the molten rock in the upper mantle?

- Magma

Where is the majority of fresh water located?

- Ice caps and glaciers

What is the difference between fresh water and ocean water?

- Salinity – salt content in ocean water, fresh water no salt (there may be trace amounts of dissolved salts)

What is the ultimate source of energy for ecosystems?

- The sun

Give an example of coevolution.

- Two species changing genetically in response to long-term interactions with each other.
- Example: hawk moth and orchid

Explain pesticide resistance.

- Humans used pesticides to try to control pest populations. Non resistant pests died and only resistant pests remained. The resistant pests mated and produced resistant offspring.

Give 3 examples of biotic factors.

- Plants, animals, bacteria: anything living or once living

Give 3 examples of abiotic factors.

- Rocks, water, air – nonliving parts of the ecosystem

Which kingdoms contain producers?

- Plants and protists

How do humans impact the balance of the carbon cycle?

- Burning fossil fuels in great quantities has increased the carbon dioxide in the atmosphere. This has caused an increase in greenhouse gases holding more heat in the atmosphere and is leading to increased global temperatures.

How does primary and secondary succession differ?

- Primary succession occurs where plant life has never existed. i.e. mosses and lichens begin to grow on the side of a mountain.
- Secondary succession occurs where plant life once existed, but suffered a tragic event. i.e. a forest was destroyed by a fire.

How does a food web differ from a food chain?

- Food chain – small, individual species interaction showing the movement of energy through an ecosystem.

- Food web – large, multiple interactions, multiple food chains, many feeding relationships

What are some threats to ocean ecosystems?

- Nutrient runoff, industrial waste, overfishing, marine life entangled in nets, sewage, algal blooms

What do scrubbers do?

- Removes poisonous gases from industrial emissions before they are discharged into the atmosphere.

What causes acid precipitation?

- Burning of fossil fuels, pollution in the atmosphere

Explain the greenhouse effect.

- The sun’s rays warm the Earth and the greenhouse gases trap heat that is radiated up from the Earth.

What could be the results of global warming?

- Rising sea levels, coastal flooding, increases in droughts, increases in major storms

What are the main differences between nekton and benthos?

- Nekton swim freely and benthos moves with the current and is usually attached to a hard surface.

Describe estuaries.

- Fertile, high biodiversity, aquatic ecosystem, salt water and freshwater meet (rivers meet oceans)

What are two types of freshwater ecosystems?

- wetlands: marshes and swamps
- bodies of water: rivers, lakes, ponds

Give an example of a population.

- all maple trees in a forest
- all rabbits in a prairie

Explain the concept of replacement level fertility.

- Each pair of adults has two children – one child to replace each adult

What does a demographer's job entail?

- Professionals that study and predictions about human populations.

At which point in human history was population growth the most rapid?

- The Modern Age

Which continent is currently having the largest population growth?

- Asia

What are some strategies to slow population growth?

- Public advertising, economic incentives, legal punishments, improving the education and status of women

Explain the Endangered Species Act and the laws it has to protect endangered species.

- 1. Cannot capture a wild animal listed as endangered for exhibition in a zoo or as a pet.
- 2. Cannot dig up an endangered plant to keep or sell.
- 3. Cannot destroyed the habitat of an endangered species.

What role does chlorine play in treating water?

- To kill bacteria and other microorganisms and to aid in preventing further bacterial growth.

Why is it difficult to clean groundwater?

- Ground water is deep in the ground and dispersed through large areas of rock
- Recycling process of groundwater can take hundreds or thousands of years.
- Pollutants cling to materials that make up the aquifer and further contaminate clean water.

Describe the tropical rain forest.

- Species of animals with specialized ways to avoid competition
- Near the equator
- Warm, wet climate
- High biodiversity

Describe the temperate deciduous forest.

- Trees grow green leaves in spring, but loose their leaves in late summer or fall
- warm summers and cool winters

Describe the tundra.

- Cold climate but has life
- Permafrost – a layer of soil that is permanently frozen beneath the topsoil