



## General Assessment Information

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30.3301- Sustainability Studies



The GEF Institute Sustainability 101 Course and Certification program is designed to equip individuals with a strong foundational knowledge of sustainability including topics such as climate change, global energy and water challenges, biodiversity and ecosystems, pollution, life-cycle analysis and new technologies. At the Institute we understand that empowering students, educators, and professionals with sustainability education is vital to a paradigm shift, to change our collective thinking. Those who adapt to the new, sustainable world will lead us, and those who do not will fall behind.

## Written Assessment

This Assessment Blueprint consists of questions that measure an individual's factual theoretical knowledge.

**Administration Time:** 2 hours

**Number of Questions:** 101

**Number of Sessions:** This assessment may be administered in one session.

### Areas Covered



## Specific Competencies and Skills Tested in this Assessment

### **Government and Sustainability**

- Recognize success and challenges of regulations
- Recognize policy successes and challenges
- Explain the cap and trade approach with regard to pollution markets
- Describe how political constraints on government action affect climate change
- Identify the problems of enforcement

### **Human's Ecological Footprint**

- Explain the ecological footprint concept
- Explain climate change and its causes
- Describe how the emergence of modern humans has affected the development of agriculture
- Explain population growth and carrying capacity
- Explain the Industrial Revolution

### **Introduction to Sustainability: Its Purposes, Challenges and Requirements**

- Define sustainability
- Explain the importance of sustainability
- Explain the triple bottom line
- Recognize the myths and misconceptions about sustainability

### **New Technology and Innovative Sustainability Approaches**

- Describe green building
- Define green jobs within the green economy
- Explain biomimicry as nature's role model
- Describe the future of energy

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## *Specific Competencies and Skills (continued)*

### **Primary Sustainability Issues: Energy, Food, Water, and Pollution**

- Describe the central role of energy
- Identify industrial pollution and toxins
- Define sustainable agriculture
- Define sustainable water systems

### **Sustainable Development: The Social Challenges**

- Describe sustainable development
- Describe global inequalities in all dimensions of sustainability
- Recognize sustainability, society, and social change
- Explain population growth, energy use, and sustainable development
- Maintain health and sustainability

### **The Economics of Sustainability**

- Explain market failures and externalities
- Explain the importance of placing a value on nature
- Describe economic growth as a dominant global economic trend
- Explain how to create a sustainable economic system
- Describe the tragedy of the commons and free rider problem
- Define ecological economics

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## Specific Competencies and Skills (continued)

### The Global Ecosystem

- Describe the importance of ecosystems
- Explain the role of biogeochemical cycles as part of the earth's system
- Describe sustainability as an integrated concept using the STEM application

### The Importance of Biodiversity

- Identify the benefits of biodiversity to humans
- Define biodiversity as nature's risk management tool
- Describe the earth's biosphere and identify where life exists
- Identify biodiversity threats and protection strategies
- Explain how the biodiversity crisis is affecting tropical forests and oceans

### Toward a Sustainable Future

- Explain sustainable design and cities
- Maintain an emerging sustainability mindset
- Recognize that organizations and new social media are promoting sustainability around the world
- Describe business sustainability initiatives and corporate social responsibility
- Recognize consumer choice and demand for sustainability

## Sample Questions

### **How is energy use related to human population growth?**

- A. As more people are born, more energy is needed to recycle goods.
- B. A greater population living in urban areas uses more energy
- C. More people require more energy necessary to obtain and use resources.
- D. Growing numbers of people are increasing the need for work.

### **What is the trend in sustainability for the future?**

- A. Sustainability is only a fad that is popular for awhile and then decrease when other interests and movements take its place.
- B. Sustainability is decreasing in value as war, crime, and poverty increase around the world.
- C. Sustainability is growing as a movement, as individuals, government, and businesses understand the need for change
- D. Only individuals are practicing sustainability as a grassroots movement that will have trouble surviving

### **Greenhouse gasses are a primary byproduct of which of the following power source?**

- A. steam engines
- B. wind power generation
- C. fossil fuel combustion
- D. hydroelectric

### **Where is most of the carbon found stored on our planet?**

- A. In the atmosphere
- B. In the lithosphere
- C. In greenhouses
- D. In the ocean

### **Which of the following is a true statement about biodiversity?**

- A. All the organisms have now been identified and catalogued on the planet.
- B. Biodiversity is important for the sustainability of ecosystems and human survival.
- C. If cared for, all ecosystems on Earth support biodiversity equally.
- D. More diverse ecosystems are under greater threat during a natural disaster.

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### Sample Questions (continued)

**Which of the following trends raises concerns about sustainable development?**

- A. The richest 1 percent control more than 40 percent of the global wealth.
- B. The world's population living below the poverty line declined from 52 percent to 26.
- C. Overall global poverty is decreasing.
- D. An increase in taxation and other economic controls.

**Which of the following is a condition considered a market failure?**

- A. Goods and services are produced in a free competitive system.
- B. Goods and services are consumed in a free competitive system.
- C. Goods and services are produced with serious health risks and environment damage.
- D. Goods and services are produced at a high cost to consumers.

**How might government subsidies benefit sustainability?**

- A. Oil company subsidies encourage ways for people to conserve energy.
- B. Renewable energy subsidies support alternative energy research, business, and use.
- C. Energy company subsidies provide support for finding new technologies to locate for fossil fuel re-serves.
- D. Subsidies provide support for new offshore drilling companies.

**What is legitimate reason why recycling is limited?**

- A. Recycled materials are downgraded and cannot replace the product of their origin.
- B. Recycling bins are difficult to maintain and move.
- C. Only a few items can be recycled that are used on a daily basis.
- D. Few people want to spend the time recycling.

**What approach can companies take to increase their profits, social responsibility, and environmental stewardship?**

- A. Increased environment protection compliance
- B. Decision making based on the triple bottom line
- C. Finding the cheapest resources available to support world economies.
- D. Stronger ad campaigns for the green practices of the company.



## Notes