**Quiz – The 4 systems Conditions**

Sustainability is essentially the ability of nature’s cycles to run forever. As we saw in this course, we are disrupting nature’s cycles in four key ways. To become sustainable, then, we must reduce and ultimately eliminate our contribution to the four Basic mechanisms that are causing the system to break down.

**Breaking the cycles**

Digging it up too quickly

Poisoning the system

Destroying the “Engine”

Inability of people to meet their needs

**Four System Conditions**

These are the four conditions for sustainability, or sustainability principles. From everything we’ve seen so far in this course, it follows that these four basic principles for sustainability are deeply rooted in science and in systems thinking. And it also follows that these four basic principles are something that everyone can agree about.

**Sustainability Principle 1**: In a sustainable society, nature is not subject to systematically increasing concentrations of substances extracted from the earth’s crust.

**Sustainability Principle 2**: In a sustainable society, nature is not subject to systematically increasing concentrations of substances produced by society.

**Sustainability Principle 3**: In a sustainable society, nature is not subject to systematically increasing degradation by physical means

**Sustainability Principle 4**: In a sustainable society, people are not subject to conditions that systematically undermine their capacity to meet their needs.

**Question 1 out of 8**

Question1: Under Oregon, each city or metropolitan area in the state has an urban growth boundary. Land inside the boundary supports urban services such as roads, water and sewer systems, parks, schools and fire and police protection that create thriving places to live, work and play. The UGB is one of the tools used to protect farms and forest from urban sprawl and to promote the efficient use of land, facilities and services inside the boundary.

Which sustainability principle do “smart growth” strategies like this contribute to most directly?

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| Principles: |  |

**Question 2 out of 8**

The Town of Canmore in Alberta, Canada purchases 20% ot its energy for electricity from renewable energy sources (primarly wind energy) and has implemented numerous measures to improve the energy efficiency of its buildings and operations. Traditionnaly, the energy source in alberta is coal-fired electricity.

Which sustainability objective are these measures primarly helping to achieve?

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| Principles: |  |

**Question 3 out of 8**

Dupont’s “Petretec” process can indefinitely regenerate throw-away polyester film into new film having the same quality as that made from virgin materials, but with cost savings of about 25%. The Petretec process unzips the polyester molecule and breaks it down into its raw materials (monomers) that can be reused over and over gain. So a popcorn bag can become an overhead transparency, then a polyester peanut butter jar, then a snack food wrapper, then a roll of film, then a popcorn bag again.

Which sustainability principle is this helping to achieve?

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| Principles: |  |

**Question 4 out of 8**

Mountain equipment Co-op is a leading Canadian supplier of quality outdoor gear and clothing. MEC uses a supplier Team Evaluation Process (STEP) and other sourcing practices that ensure that its products are manufactured in safe and healthy workplaces where human and civil rights are respected. Which sustainability principle are MEC’s sourcing policy and practices primarly helping to achieve?

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| Principles: |  |

**4 more challenging questions that will rely on more than 1 principle**

**Question 5 out of 8**

In 2003, 32% of residential waste from Toronto homes was diverted from landfills thanks to a variety of recycling and yard composting programs. This translates to about 287,000 tonnes of garbage.

Which sustainability principle(s) is this action helping to achieve?

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| Principles: |  |

**Question 6 out of 8**

The European Union implemented “extended producer responsibility” regulations in 2002, in order to tackle the greatly increasing waste stream of electrical and electronic equipment in Europe. These make producers responsible for taking back and recycling electrical and electronic equipment.

One specific set of regulations restricts the use of certain hazardous substances in electrical and electronic equipment. It requires the substitution of various heavy metals (lead, mercury, cadmium and hexavalent chromium) and brominates flame-retardants in new equipment, with less harmful substances. Which sustainability principle(s) is this directive helping to achieve?

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| Principles: |  |

**Question 7 out of 8**

By introducing a public transit system that charges low fares to users and that makes getting around the city very easy, which principle(s) is the City of Curitiba, Brazil helping to achieve?

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| Principles: |  |

**Question 8 out of 8**

On Brazil’s Silves Island, part of the Amazon rainforest, a group of women is working to preserve their culture and produce eco-friendly forest products. In less than three years, more than one hundred women have had the chance to earn a steady income and respect their precious ecosystem.

From the Macacarecuria tree, the women harvest giant seed pods, which they fashion into candle holders. Local Peshury trees, prized for their dyes, are grown and replanted in the most ravaged places. And in another village, women gather wild melon leaves to make a traditional soap used to treat dermatitis. Which sustainability principles are the women of AVIVE helping to achieve?

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| Principles: |  |