

**In completing this test, I abide by the Honor Code of the Lebanese American University.**

**Name:** .....

**UIN:** .....

**IMPORTANT NOTE**

This exam is comprised of 59 single choice questions inscribed on pages 2 through 13. For each of the 59 questions, mark the bullet corresponding to the one best answer to the question.

There is a total of 13 pages including this page. It is your responsibility to check that you have all the 13 pages. Please take a minute and check that you have a total of 13 pages. If a page is missing, kindly return this booklet to me and ask for another booklet.

You are allotted 55 minutes to complete this test.

**Good luck!!**

**Developing countries such as Pakistan have per capita ecological footprints of approximately 0.6 hectares while developed countries, such as the United States and Norway, have per capita footprints of 9.7 and 7.9 hectares respectively. Although countries like Pakistan have some of the largest populations in the world, why are the ecological footprints of the United States and Norway so much larger than those of countries like Pakistan?**

- Fewer natural resources are available in developing countries.
- Total fertility rates are higher in developing countries compared to developed countries.
- Developing countries are poor; their citizens have little effect on the environment.
- Developed countries have high rates of consumption of natural resources.

**Which of the following suggestions would result in a reduction of a person's ecological footprint?**

- Becoming a vegetarian
- Buying more products
- Exercising more
- Becoming more affluent, and therefore buying whatever gadgets desired

**The concept of an ecological footprint is designed to**

- study potential population growth.
- study the impact of women's empowerment on the environment.
- study the ecology of an area.
- study the environmental impact of an individual or of a population.

**Which of the following are the three main factors used to calculate human's impact on the globe's environment, according to the model proposed by Holdren and Ehrlich (1974)?**

- Population, Absolute Poverty, Technology
- Population, Age Structure, Technology
- Population, Affluence, Technology
- Population, Agriculture, Time

**Which of the following statements best reflects an ecologist's definition of consumption?**

- Consumption is what consumers do with their money.
- Consumption is what consumers do to keep with the Joneses.
- Consumption is the transformation of materials and energy.
- Consumption is obtaining energy and nutrients by eating something else.

**The population/ consumption version of I = PAT states that  $I = P \times C/P \times I/C$ , where I refers to**

- the number of people or households.
- the transformation of energy, materials and information.
- environmental degradation and/or resource depletion.
- none of the above.

**The three Rs of consumption shrinkage stand for**

- reduction, refinement and replacement.
- reduction, reuse and replacement.
- reuse, replacement and recycling.
- reduce, reuse and recycle.
- re-buy, reuse and recycle.

**Consider the following data on ecological footprints for average citizens of several nations (in hectares per person).**

Country	Ecological Footprint
United States	9.7
Canada	7.5
Pakistan	0.6
Ethiopia	0.8
China	1.6

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**The ecological footprints for the average citizens of the nations shown above indicate that**

- the area of the territories of the United States is the largest.
- the United States residents have a greater impact on the environment than people from any of the other countries.
- the United States is the most populous country in the world.
- the United States population density is the highest in the world.

**A person's carbon footprint is the area needed to absorb the carbon dioxide emissions**

- generated by a person's home, energy use and transportation.
- resulting from food production, processing and transport.
- resulting from the manufacturing, transport and disposal of consumer items.
- due to all of the above.

**Nature reveals four basic principles that could help us to transition to sustainable societies. Which of the following is NOT one of those principles?**

- Reliance on solar energy
- Biodiversity
- Nutrient cycling
- Survival of the fittest
- Population control

**Ecology is the study of**

- human impact on the environment.
- the abiotic elements of the environment.
- the biotic elements of the environment.
- how organisms interact with each other and the abiotic environment.

**The total of all the different species that live in a certain area is referred to as**

- population.
- community.
- ecosystem.
- biosphere.

**Which of the following is a logical argument AGAINST the Cornucopian view of Earth's resources?**

- Human ingenuity is one of Earth's most valuable resources.
- While many people in developing countries suffer from hunger, it is more often the result of civil wars and/or poor distribution of existing food supplies.
- Worldwide populations have increased, but so have standards of living.
- The resources on which we rely most heavily such as petroleum are in limited supply.

**Which of the following provides an accurate description of the current global population growth statistics?**

- Population growth rates are declining, causing global population size to decrease.
- Population growth rates are rising but the global population is declining.
- Population growth rates are declining, but the global population is still rising.
- Population growth rates are rising, causing the global population to continually grow.

Consider the data presented in the following table.

Region	Total Fertility Rate (TFR)
A	1.4
B	2.1
C	2.5
D	2.7
E	3.4
F	4.0

Based on the above table, which of the regions has a negative rate of population growth?

- Region F
- Region D
- Region A
- Region C

Which of the following is being hit the hardest by the HIV/AIDS epidemic?

- Germany
- China
- The United States
- Africa

Which of the following is NOT normally an effect of poverty?

- Premature death from normally nonfatal diarrhea
- Lack of clean drinking water
- Severe respiratory illness from openly burning wood indoors
- Diseases because of poor sanitation
- Heart disease and diabetes from obesity

The real prices of goods and services do not usually include

- the cost of raw materials.
- the cost of manufacturing.
- the environmental costs of resource use.
- the cost of distribution.
- the cost of advertising.

Which of the following is NOT a goal of environmental science?

- Learn how nature works
- Learn how the environment affects us
- Learn how to deal with environmental problems
- Learn how to live more sustainably
- Learn how to persuade politicians to enact sustainability legislation

**Which of the following is TRUE of demographic transition as countries become industrialized?**

- Death rates drop, followed by birth rates.
- Birth rates drop, followed by death rates.
- Birth and death rates rise at the same time.
- Birth and death rates fall at the same time.
- Neither birth nor death rates fall.

**The total fertility rate is**

- the number of children born to a woman during her lifetime.
- the number of children a couple must bear to replace themselves.
- the average number of children born to women in their reproductive years.
- the number of live births per 1000 people.
- the births and immigrations into a population.

**Which of the following best explains the reason for a relatively stable population before the age of industrialization (in the pre-industrial stage)?**

- high birth rates and low death rates
- low birth rates and high death rates
- low birth rates and low death rates
- high birth rates and high death rates

**According to the demographic transition theory, which developmental stage are most of the developed countries in Western Europe currently in?**

- The industrial stage
- The pre-industrial stage
- The transitional stage
- The post-industrial stage

**A possible reason families in some countries may decide to have many children is**

- education.
- contraceptive availability.
- empowered women.
- need for labor in rural areas.

**Evaluate the following statement: Development, the empowerment of women, and access to contraceptives have all contributed to a decrease in fertility rates. This statement is**

- correct.
- not correct, because the empowerment of women has no effect on fertility rates.
- not correct, because development encourages people to have more children.
- not correct, because knowledge about contraceptives is more important than access to them.

**Which of the following worldviews is the most anthropocentric view?**

- Environmental wisdom worldview
- Planetary management worldview
- Stewardship worldview
- All of the above views are equally anthropocentric.

**The current world population is approximately**

- 8.5 billion.
- 7.5 billion.
- 7 billion.
- 6.5 billion.

**What percentage of the earth's surface is covered by water?**

- 86%
- 71%
- 67%
- 58%
- 52%

**Fossil fuels and minerals are found in the**

- atmosphere.
- hydrosphere.
- geosphere.
- biosphere.

**The two most abundant gases in the air we breathe are**

- nitrogen and oxygen.
- argon and carbon dioxide.
- oxygen and argon.
- carbon dioxide and oxygen.

**Life on earth depends on interaction of gravity, the cycling of matter, and**

- cycling of energy.
- one-way flow of energy.
- one-way flow of matter.
- the destruction of energy.
- the consumption of matter.

**In the absence of an effective social security system you would expect the total fertility rate (TFR) to**

- decrease.
- stay the same.
- increase.
- increase, then decrease.

**Consumption by affluent countries may create shortages in the future because of which of the following reasons?**

- All natural resources are recyclable.
- Affluent countries consume much greater amounts of scarce natural resources than poor countries.
- Natural resources are not renewable.
- Consumption is equally distributed among all countries, both more affluent and less affluent.

**When you drop aluminum cans at the recycling center, you are**

- overexploiting a non-renewable resource.
- overexploiting a renewable resource.
- using a non-renewable resource sustainably.
- using a renewable resource sustainably.

**Old-growth Douglas Fir trees (trees over 100 years old) in the Pacific Northwest are being harvested faster than they are being replaced either by replanting or by natural processes. This is an example of**

- a non-renewable resource being overexploited and exhausted.
- a renewable resource (at intermediate timescales) being overexploited and exhausted.
- a non-renewable resource being used sustainably.
- a renewable resource (at intermediate timescales) being used sustainably.

**Complete the following statement: While renewable resources can be \_\_\_\_\_, they are also \_\_\_\_\_.**

- regenerated, exhaustible
- recycled, unlimited
- regenerated, manipulated
- manipulated, exhaustible

**On a continuum of renewability, with virtually unlimited and perpetually renewable natural resources on the far left-hand side of the continuum and non-renewable natural resources on the far right-hand side, in which order will the following natural resources fall from left to right on the continuum: agricultural crops, soils, sunlight, copper?**

- sunlight, agricultural crops, soils, copper
- sunlight, agricultural crops, copper, soils
- sunlight, soils, agricultural crops, copper
- copper, sunlight, agricultural crops, soil



**Why should we be concerned about managing renewable resources if they can be renewed by natural processes?**

- We should not be concerned about managing renewable resources since they can be regenerated and are plentiful.
- Renewable resources occur in a fixed amount; therefore, we should be careful when using them.
- Although renewable resources can be regenerated, they can also be exhausted because of overuse and poor management practices.
- Renewable resources include fossil fuels and oils that need to be managed carefully.

**All of the following natural resources are directly available for human use EXCEPT**

- fresh air.
- fresh surface water.
- fertile soil.
- wild edible plants.
- petroleum.

**The idea that we are separate from nature, and that nature exists mainly to meet our needs and increasing wants is**

- the planetary management worldview.
- the stewardship worldview.
- the environmental wisdom worldview.
- the environmental justice movement.

**Population change may best be calculated using which of the following formulae?**

- $(\text{deaths} + \text{emigration}) - (\text{births} + \text{immigration})$
- $(\text{births} + \text{immigration}) - (\text{deaths} + \text{emigration})$
- $(\text{deaths} + \text{immigration}) - (\text{births} + \text{emigration})$
- $(\text{births} + \text{emigration}) - (\text{deaths} + \text{immigration})$
- $(\text{births} + \text{deaths}) - (\text{immigration} + \text{emigration})$

**A fisherman might believe that the pursuit of his own individual interest causes no problems as long as**

- he can catch as many fish as possible and as quickly as possible.
- the fish population can naturally replenish itself.
- he does not know the size of the fish population and he only catches small fish.
- the number of fishers multiplied by the number of fish exceeds the natural replenishment.

**According to Hardin, which of the following solutions is most effective in channeling human self-interest into pro-environmental behavior?**

- Education
- Government laws, regulations, and incentives
- Small-group/community management
- Moral, religious, and/or ethical appeals

**In the 1970s, a popular animated character named Woodsy Owl encouraged American children to “Give a hoot. Don’t Pollute.” His new motto, “Lend a Hand. Care for the Land.” encourages everyone to make a positive difference in the world. This strategy used by the United States Department of Agriculture (USDA) Forest Service represents which type of solutions to Hardin's tragedy of the commons process?**

- Small group/community management
- Education
- Government laws, regulations and incentives
- Religious appeal

**The collapse of the Alaskan king crab population is due to overfishing. Which of the following is the best solution to address this problem?**

- Replace Alaskan king crab in some recipes
- Reduce the use of other crab species
- Mutual agreement to stop the harvesting of the species for a period
- Invest in fishing vessels for other species

**If local fishers organize themselves in a group and decide to follow certain rules of sustainable fishing, this would be an example of which kind of method for promoting pro-environmental individual behavior?**

- Religious and ethical appeals
- Government laws and regulations
- Small group/community management
- Programs of education

**Which of following statements properly describes the "tragedy of the commons" situation?**

- Greedy individual behavior, which, when repeated by enough individuals, proves detrimental to the environment.
- Ordinary individual behavior, which, when repeated by enough individuals, proves detrimental to the environment.
- Greedy corporate behavior, which proves detrimental to the environment.
- Ordinary individual behavior, which, when repeated by enough individuals, benefits the environment.

**Using normally renewable resources faster than nature can renew them is best referred to as**

- nutrient cycling.
- nutrient deficit.
- sustainability.
- trade-offs.
- degrading natural capital.

**An environmentally sustainable society**

- lives off its natural income of renewable resources.
- does not degrade its natural capital.
- provides its population with adequate and equitable access resources.
- does not compromise access of future generations to basic needs.
- All of the above apply to environmentally sustainable societies.

**Which of the following generalizations about developing countries is TRUE?**

- They make up about one-tenth of the world's population.
- They have high average per capita GDP.
- They include such Asian countries as India, China and Japan.
- They use a much smaller portion of the world's resources compared to developed countries.
- They are highly industrialized.
- More than one of the above statements is true.

**What is the primary difference between renewable resources and nonrenewable resources?**

- How easily they are discovered
- The amount of the resource available
- The length of time it takes for the resource to be replenished
- One is renewed by natural processes; the other is not.
- How fast they are being used up
- None of the above

**Which of the following is NOT a solution to the problem of the degradation of a shared common resource?**

- Prevent everybody from using the resource, even if that means that half the inhabitants of the area will lose their source of income
- Convert the shared common resource to private ownership
- Use the shared common resource at a rate well below estimated sustainable yields
- Regulate access to the resource
- All of the above are not solutions to the problem of the degradation of a shared common resource.

**Which of the following is NOT one of the factors currently affecting birth and fertility rates?**

- Number of people 60 or older
- Cost of raising and educating children
- Urbanization
- Educational and employment opportunities for women
- Average age at marriage

**Which of the following would usually decrease the likelihood of a couple having a child?**

- The child is part of the family labor force.
- Contraceptives are not available.
- Women have opportunities to participate in education and employment.
- No public or private pension system exists.
- Infant mortality rates are high.

**Two useful indicators of overall health in a country or region are**

- birth rate and death rate.
- replacement-level fertility rate and total fertility rate.
- life expectancy and death rate.
- life expectancy and infant mortality rate.
- population growth rate and death rate.

**Countries that have reached zero population growth have an age structure diagram that**

- forms an inverted pyramid.
- forms a broad-based pyramid.
- shows little variation in population by age.
- has a large pre-reproductive population.
- has a large reproductive population.

**A country with a total fertility rate (TFR) that falls below 1.5 children per couple for a prolonged period will experience all of the following EXCEPT**

- rise in the proportion of older people.
- increasing demand on medical care.
- increasing demand on social security funds or their equivalent.
- labor shortages.
- increasing number of working taxpayers.
- None of the above; all of the above may be experienced by such countries.

**According to demographers, one of the most important population statistics is that nearly 30% of the people on the planet are under 15 years of age. Why do you think is this important?**

- Young people buy lots of goods and services.
- Young people will be the leaders of the future.
- Young people will pay for all the damage we have inflicted on the environment, and feel the effects of global warming.
- Young people don't have good sense.
- Young people are poised to move into their prime reproductive years.

**Imagine the following scenario: Country X is having a population crisis. With a small landmass, it already has a large population, which is growing rapidly. Country X's total fertility rate remains around 6.0, despite nationwide attempts to inform people about the problems related to overpopulation. Which of the following four plans do you think would have the GREATEST success in reducing fertility rates?**

- Improve government programs that assist the elderly, thus reducing the incentive to have more children as a sort of insurance.
- Focus attention on raising the status of women in the community, thus providing them more opportunities for control over their reproduction.
- Create a government-funded program with the goal of changing cultural standards, focusing on the perception that smaller families are better than larger ones.
- Develop an aggressive outreach program to educate women about family planning methods and provide easy access to contraceptives.