Review Questions of First Exam HCC, Jan.2017.

**Multiple Choice Questions**

1. Environmental science is an interdisciplinary area of study that deals with all of the following except
A. politics.
B. economics.
C. ethics.
D. All of these are correct.

2. Environment is defined as:
A. the surrounding conditions that affect organisms.
B. everything that affects an organism during its lifetime.
C. all organisms including people affecting many components.
D. More than one of the choices are correct.
E. None of the choices are correct.

3. Interrelatedness is a central factor of environmental science. Which of the following is an example of interrelatedness?
A. (A) The production of red clover plants in fields in England to the number of cats in the area.
B. (B) The reintroduction of wolves to Yellowstone National Park to the amount of livestock.
C. (C) The reintroduction of wolves to Yellowstone National Park to the water flow through the landscape.
D. A & B only.
E. A & C only.
F. All of the above.

4. An ecosystem is
A. the transition zone between grassland and desert.
B. a group of interactive species and their environment.
C. a body of freshwater.
D. the lowland area on either side of a river.

5. Which is the following is a correct example of interrelatedness?
A. Wolves reintroduced --> coyotes decline --> rodents decline --> willows increase
B. Wolves reintroduced --> elk decline --> willows increase --> beavers increase
C. Wolves reintroduced --> coyotes decline --> rodents increase --> foxes decrease
D. Wolves reintroduced --> elk decline --> willows increase --> beavers increase --> water flow stays the same

6. The Earth Summit was
A. the first worldwide meeting dealing with environmental concerns.
B. formerly known as the UNCED.
C. held in Rio de Janeiro in 1992.
D. All of these are correct.

7. The result of the 1997 Kyoto Summit was an international commitment to
A. reduce the amount rainforest logging.
B. increase the amount of land placed in conservation easement.
C. reduce emissions of greenhouses gases.
D. reduce the number of oil spills.

8. Agenda 21 was an agreement by
A. seven nations to halt CFC production in 1987.
B. 90 nations to enhance global biodiversity in 2000.
C. 178 nations for comprehensive sustainable development in 1992.
D. 300 nations to limit trade in endangered species in 1985.

9. The organization of colleges and universities in the United States and Canada that promotes sustainability in higher education is called
A. UNCED.
B. UNESCO.
C. AASHE.
D. STARS.

10. Malaria is widespread in tropical and subtropical regions, with some 525 million cases occurring annually and resulting in one to three million deaths, mainly in young children:
A. of the Quechua Indians in Peru.
B. in Sub-Saharan Africa.
C. of the Jesuits in Europe.
D. of the pilgrims in Massachusetts.

11. Ethics is
A. one branch of philosophy.
B. a characteristic of environmental energy.
C. not to be used when making environmental changes in technology.
D. All of these are correct.

12. Biocentrism is also known as
A.  Ethical communism
B.  Life-centered environmental ethics
C.  Aldo Leopoldism
D.  Bio-ethics

13. Environmental anthropocentrism is a theory which states that
A. environmental responsibility is derived from human interest.
B. all forms of life have an inherent right to exist.
C. all laws should protect the health of human beings.
D. the environment deserves direct moral consideration.

14. Which naturalist stated that regulated hunting can maintain a proper balance of wildlife?
A. Rachel Carson
B. Lewis Thomas
C. Aldo Leopold
D. John Muir

15. Which naturalist stated that only government control could save California sequoia groves?
A. Rachel Carson
B. Aldo Leopold
C. Ralph Waldo Emerson
D. John Muir

16. Which naturalist was fascinated by the countryside around Concord, Massachusetts and wrote of his experiences living close with nature?
A. Henry David Thoreau
B. Lewis Thomas
C. Rachel Carson
D. Ralph Waldo Emerson

17. What is the name of the theory which suggests that the environment has direct rights and qualifies for moral personhood?
A. environmental justice
B. resource exploitation
C. ecocentrism
D. comprehensive environmental response

18.  To get around the Oil Pollution Act of 1990 many oil carriers
A. use lightly regulated oil barges pulled by tugboats.
B. have constructed pipelines under the ocean floor.
C. have increased the use of supertankers.
D. use unregulated foreign cruise ships.

19. Industries pollute because
A. manufacturing consumes energy and produces waste.
B. they want to cut costs and increase profits.
C. proper waste disposal is too costly.
D. All of these are correct.

20. The Oil Protection Act of 1990
A. allows the government to regulate oil prices.
B. regulates pollution from oil refineries.
C. regulates supertankers and reduces the chances of oil spills.
D. both allows the government to regulate oil prices and regulates pollution from oil refineries.

21. Which of the following books cites the danger of pesticides to food, wildlife, and humans?
A.  *Sand County Almanac*
B.  *Walden*
C.  *Silent Spring*
D.  *Nature*

22. In 1994, delegates from around the world gathered for the Conference on Population and Development. Representatives from developing countries protested that
A. a baby born in the United States will consume 20 times the resources in its lifetime as an African or Indian baby.
B. overpopulation is a bigger environmental problem than overconsumption.
C. the United States consumes 90% of the world's resources.
D. China has the highest population and consumes 90% of the world's resources

23. World food production has doubled in the last 40 years because of
A. diseases, world trade, and new sources of water.
B. fertilizers, pesticides, and high-yielding varieties.
C. genetic modifications, DNA fingerprinting, and international treaties.
D. organic farming practices, erosion control, and farm labor.

24.  What percent of the earth's water is undrinkable?
A. 1%
B. 25%
C. 55%
D. 87%
E. 99%

25. Much of the credit for increases in "faith-based" environmentalism can go to the:
A. National Religious Department of Education (NRDE)
B. National Religious Partnership for the Earth (NRPE)
C. National Religious Partnership for the Environment (NRPE)
D. National Religious Parents for the Environment (NRPE)

26. Who was NOT a notable 19th century conservationist philosopher?
A. Ralph Waldo Emerson
B. John Muir
C. Aldo Leopold
D. Rachel Bilson

27. Sustainable development is often defined as "meeting the needs of current generations without compromising the ability of future generations to meet theirs." Sustainable development is much like:
A.  conservationism.
B.  environmental pragmatism.
C.  preservationism.
D.  ecocentrism.

28. Which of the following best matches the description?

28. Believed that "wilderness mirrors divinity, nourishes humanity, and vivifies the spirit."
A. Henry David Thoreau
B. preservation ethic
C. Rachel Carson
D. development ethic
E. conservation ethic
F. Ralph Waldo Emerson
G. Aldo Leopold
H. industrial ecology
I. John Muir
J. ethics
K. morals
L. environmental justice
M. deep ecology

29. Predominant feeling of a culture concerning ethical issues.
A. Henry David Thoreau
B. Preservation approach
C. Rachel Carson
D. Development approach
E. Conservation approach
F. Ralph Waldo Emerson
G. Aldo Leopold
H. industrial ecology
I. John Muir
J. ethics
K. morals
L. environmental justice
M. deep ecology

30.  Author of *Walden*, which describes a year in which he lived in direct contact with nature.
A. Henry David Thoreau
B. preservation ethic
C. Rachel Carson
D. development ethic
E. conservation ethic
F. Ralph Waldo Emerson
G. Aldo Leopold
H. industrial ecology
I. John Muir
J. ethics
K. morals
L. environmental justice
M. deep ecology

31. Risk based corrective action was formed to
A. protect environmental ecological resources.
B. help deplete ecological resources.
C. correct environmental process based on ethics.
D. None of these are correct.

32. Risk tolerance can be based upon
A. users management policy.
B. risk tolerance programs.
C. perceptions of risk.
D. All of these are correct.

33. Risk analysis consists of two primary considerations:
A. time and costs.
B. issues involved and time.
C. risk and cost.
D. risk and time.

34. The use of facts and assumptions to estimate the probability of harm to human health or the environment is called
A. negligible risk.
B. risk management.
C. sustainable development.
D. risk assessment.

35. Pollution prevention can
A. waste money.
B. take on purely economic aspects.
C. rarely take care of waste management.
D. rely on enforcement from regulatory agencies to help with implementation.

36. Which of the following is NOT a pollution cost?
A. expenditure to avoid pollution damage once it has occurred
B. increased health costs
C. sewage treatment
D. None of these are correct

37. Which of the following is a pollution prevention technique?
A. landfills
B. alternative fuels
C. sewage treatment
D. incineration

38. Which of the following is NOT a characteristic of sustainable development?
A. renewability
B. institutional commitment
C. assigning value to everything
D. adaptability

39. Which is NOT a step in the cost-benefit analysis?
A. determination of tradable emissions
B. calculation of the net profit
C. identification of the project
D. determination of all impacts

40. Which of the following is a market-based instrument?
A. cost of raw materials
B. recycling costs
C. information programs
D. None of these are correct.

 41. The goal of a deposit-refund program is to
A. encourage product recycling through the refund of a deposit.
B. use tax money to fund environmental cleanup programs.
C. give companies the right to emit specified quantities of pollutants.
D. inform consumers of the market choices.

 42. Which of the following does NOT demonstrate the use of renewable resources?
A. using wind to power windmills to produce electricity
B. using water from a lake to turn turbines in a hydroelectric dam to produce electricity
C. using underground coal deposits to produce heat and electricity
D. using corn or switchgrass to produce fuel ethanol to power our vehicles

43. The amount of a good or service available to be purchased is the
A. resource.
B. supply.
C. demand.
D. None of these are correct.

44. What does the price of a product or service reflect?
A. the fair market value
B. that if a person does not want the product, then the price is too high
C. the demand for and availability of the product
D. the highest amount the seller can get for the product

45. Which of the following is a disadvantage of a subsidy?
A. It places a value on everything, including aesthetics.
B. It increases the demand for a product.
C. It discourages technological innovation for environmental protection.
D. The actual cost of a subsidized product is higher because bureaucracy necessary to administer the subsidy costs money.

46. When the supply of a commodity exceeds the demand
A. producers raise their prices.
B. producers lower their prices.
C. producers ask for government subsidies.
D. producers use tradable emissions permits.

47. In the United States, performance bonds are used
A. to encourage recycling.
B. to cover the cost of reclaiming and revegetating mined sites.
C. to reduce pollutants in industrial wastewater.
D. All of these are correct.

48. Which of the following is an example of an extended product responsibility?
A. ecotourism
B. soft loans for business planning to implement environmental products
C. the use of recycled wood products in the manufacture of new products
D. tradable emission permits26.  The basic premise behind the "The tragedy of the commons" is
A. a resource becomes overexploited when its ownership is shared.
B. pollution prevention is costs less than pollution clean-up.
C. when assessing risk, people frequently overestimate unfamiliar risks.
D. All of these are correct.

49. Classically there are three kinds of resources, which are
A. land, water, and air.
B. oil, labor, and capital.
C. land, labor, and water.
D. labor, capital, and land.

50. We assign value to natural resources based on our perception of their \_\_\_\_\_\_\_\_\_\_\_\_\_.
A. relative scarcity
B. relative abundance
C. cost to extract
D. profit margin

51.  Many of the negative effects companies have on the environment could be offset by \_\_\_\_\_\_\_\_\_ government regulation, but such regulation could also \_\_\_\_\_\_\_\_\_\_ impact industry and the economy.
A.  increased, positively
B.  decreased, negatively
C.  increased, neutrally
D.  increased, negatively
E.  decreased, positively

52.  Which of the following is NOT a factor in consumer interest in the green economy?
A.  environmental and economic benefits of energy efficiency
B.  development of sustainability policies and goals by corporations
C.  general recognition by business and industry that there will be a price on carbon emissions
D.  general knowledge that the government will be raising taxes on oil

53.Economic factors should be considered when
A. reducing the number of oil spills.
B. increasing the amount of waste in logging.
C. making any environmental decisions.
D. None of these are correct.

 Which of the following best matches the description?

54. Using renewable resources in harmony with ecological systems to produce a rise in real income and improved standard of living.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

55. Decision-making process that uses input such as risk assessment and economic impacts.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

56. Expenses borne by someone other than the individuals who use the resource.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

57. Amount of a product that consumers are willing and able to buy at a given price.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

58. Mathematical statement about how likely it is that something will happen.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

59. Gift to private enterprise by government when the enterprise is in economic difficulty.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

60. Relationship between available supply of a commodity or service and its price.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

61. Point at which there is no significant health or environmental risk.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

62. Use of facts to estimate the probability of harm to human health that may result from exposure to pollutants, toxins, or management decisions.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

63. Likelihood that a condition or action will lead to injury, damage, or loss.
A. risk
B. supply/demand curve
C. subsidy
D. probability
E. demand
F. risk assessment
G. risk management
H. sustainable development
I. negligible risk
J. external costs

64. The scientific method is
A. reliable.
B. impartial.
C. limited in when it can be used.
D. All of these are correct.

65. Scientists distinguish between situations that are merely correlated and those that are correlated *and* show
A. relationships.
B. cause-and-effect relationships.
C. cause-and-relation.
D. None of these are correct.

66. Communication is a central characteristic of the
A. scientific method.
B. material conference.
C. scientific action.
D. All of these are correct.

67. Pseudoscience
A. is a deceptive practice.
B. utilizes appearance and language of science.
C. is misleading.
D. All of these are correct.

68. Repeatability in an experiment is important because
A. it eliminates bias.
B. independent investigators must be able to get the same results.
C. it helps to support the initial hypothesis.
D. only independent investigators must be able to get the same results and it helps to support the initial hypothesis.
E. All of these are correct.

69. The scientific method is the process that scientists use to
A. evaluate student learning.
B. rigorously test the solutions to new questions.
C. study a crime scene.
D. photograph human behavior.

70. Some of the steps followed in the scientific method include:
A. write a dissertation and present the information at a scientific conference.
B. analyze historical events and offer your opinion of the key findings.
C. observation, formulate and test a hypothesis, compare results to others and publish.
D. interview many people about their reaction to current events.

71. Scientists usually experiment by collecting data
A. from as large a sample as possible.
B. from one source only.
C. from their relatives.
D. only from other researchers and comparing their results.

72. "Matter" is made up of
A. atoms.
B. proteins.
C. bases.
D. pseudo electrons.

73. Which of the following is NOT an inorganic household chemical?
A. ammonia
B. salt
C. vinegar
D. lye

 74. The position of an element in the Periodic Table tells you
A. whether it is organic or inorganic.
B. the number and position of the parts of the atom.
C. the amount of potential energy of the atom.
D. whether it is used in photosynthesis or respiration.

75. Gasoline engines are
A. less efficient than diesel engines.
B. more efficient than diesel engines.
C. more likely to last longer than diesel engines.
D. 58% more efficient than hybrid engines.

76. Which of the following light sources is the most efficient?
A. incandescent
B.  LED
C. fluorescent
D. sodium vapor

 77. Which energy conversion system is the least efficient?
A. electric motor
B. home oil furnace
C. steam-power plant
D. automobile engine

 78. The energy released as water flows downhill from behind a dam is an example of
A. kinetic energy.
B. hydroxyl ion formation.
C. activation energy.
D. potential energy.

79. When energy is converted from one form to another, the loss of energy is usually in the form of
A. water.
B. fluorescent light.
C. heat.
D. radioactivity.

 80. Which of the following small molecules are converted to form sugar in photosynthesis?
A. oxygen and water
B. hydroxyl ion and hydrogen
C. carbon dioxide and oxygen
D. water and carbon dioxide

 81. What does it mean when a solution has a low pH number?
A. It is a base.
B. It is a catalyst.
C. It is an acid.
D. It has a high number of hydroxyl ions.

82. What is the fundamental subunit of matter?
A. molecule
B. compound
C. mixture
D. atom

83. The second law of thermodynamics states that
A. energy is the ability to do work.
B. useful energy is lost when converting from one form of energy to another.
C. energy can neither be created nor destroyed.
D. all energy is either kinetic or potential.

84. Which of the following is released as a product of respiration?
A. energy for growth and reproduction
B. fats, sugars, and proteins
C. oxygen
D. chlorine ions

85. The nucleus of an atom contains
A. only electrons.
B. electrons and protons.
C. only protons.
D. protons and neutrons.

 86. The heat that is transferred from a hot object to your hand is known as
A. sensible heat.
B. latent heat.
C. entropy.
D. kinetic energy.

87. The heat that causes liquid water to evaporate from your skin is called
A. sensible heat.
B. combustion.
C. evapotranspiration.
D. latent heat.

 88. Energy that cannot be used to do useful work is referred to as
A. potential energy.
B. entropy.
C. kinetic energy.
D. enzymatic energy.

 89. Reproducibility is an important part of the scientific method and means that
A. other scientists are able to repeat the experiment and obtain similar results.
B. scientists show all the calculations in their work.
C. scientists have an idea that they are testing.
D. a control group is always used.

90. In order to discern whether or not a product is green you should look for
A. statements about the use of recycled materials.
B. evidence of a company's commitment to making and marketing a green product.
C. a list of actual ingredients and their sources following a statement of using all natural ingredients.
D. All of these are correct.

91. Which of the following is an example of an abiotic factor?
A. the number of individuals of a particular species living in a community
B. the interactions between different species in a community
C. the diversity of prey and predator species in a community
D. the climate of the community in which the species mentioned above inhabit

92. Natural selection is the process that determines
A. who an individual mates with.
B. which scientist publishes their experiments.
C. which individuals within a species will reproduce and pass their genes to the next generation.
D. how active an animal is at night.

93. The development of herbicide resistance in populations of weeds over several generations is an example of
A. social Darwinism.
B. biogeochemical cycles.
C. organic farming.
D. evolution.

94. Charles Darwin is generally credited with
A. developing the concept of sexual dimorphism.
B. developing the concept of natural selection.
C. developing the concept of genetic concept.
D. All of these are correct.

95. Among plants, a condition that results in the number of sets of chromosomes in cells to increase, is called
A. multi-genetics.
B. polyploidy.
C. diploid.
D. haploid.

96. Extinction of organisms is
A. very unusual.
B. uncommon.
C. not occurring today.
D. a common event.

97. Ecologists distinguish two different kinds of competition. One is
A. intraspecific.
B. interspecific.
C. ultraspecific.
D. Both intraspecific and interspecific are correct.

98. This concept states that no two species can occupy the same ecological niche in the same place and the same time.
A. Natural Selection
B. Genetic Drift
C. Competitive Exclusion Principle
D. Niche Exclusion

99. Two organisms that interbreed and produce fertile offspring are said to be individuals of the same
A. community.
B. niche.
C. habitat.
D. species.

100. When a population becomes isolated from another over a long period of time
A. gene exchange is likely to occur.
B. speciation will not occur.
C. speciation is likely to occur.
D. extinction is likely to occur.

101. Ecologists have traditionally categorized the roles of organisms in ecosystems into three broad categories that include
A. producers.
B. consumers.
C. decomposers.
D. All of these are correct.

102. The use of fertilizers in agriculture has significantly altered several nutrient cycles including
A. nitrogen.
B. phosphorus.
C. potassium.
D. All of these are correct.

103. The chief limiting factor to the success of most trout species is
A. the ability to reproduce.
B. the dissolved oxygen content in water.
C. the amount of plant biomass.
D. All of these are correct.

104. What is the term used to describe food chains which overlap and intersect?
A. food web
B. detrital food chain
C. natural selection
D. range of tolerance

105.  The small amount of dissolved oxygen found in warm water is considered a \_\_\_\_\_\_\_ to the success of many fish species.
A.  biotic factor
B.  limiting factor
C.  niche
D.  None of these are correct

106. Grazing animals and the grasses they eat have both evolved in response to each other's influence. This process is known as
A. coevolution.
B. extinction.
C. competitive exclusion principle.
D. interspecific competition.

107. Which of the following organisms is a primary producer?
A. fungi
B. grasshoppers
C. grass
D. bacteria

108. Which of the following organisms is a secondary consumer?
A. wolf
B. elk
C. mouse
D. bacteria

109. Which of the following is NOT a decomposer?
A. fungi
B. bacteria
C. moss
D. None of these are correct.

110. In a mutualistic relationship
A. one organism benefits while the other is unaffected.
B. both species benefit.
C. one species benefits while the other is harmed.
D. endoparasites outnumber ectoparasites.

 111. Each step in the flow of energy through an ecosystem is known as a
A. food chain.
B. trophic level.
C. plateau of consumption.
D. food web.

112. The relationship between frogs and insects is an example of
A. intraspecific competition.
B. coevolution.
C. a predator-prey relationship.
D. competitive exclusion.

113. Biting insects that transmit parasites are known as
A. vectors.
B. endoparasites.
C. keystone species.
D. None of these are correct.

114. Tapeworms living inside the intestines of their host are an example of what type of relationship?
A. symbiosis
B. commensalisms
C. ectoparasitism
D. endoparasitism

115. Which of the following elements is a limiting factor to plants in naturally occurring soil?
A. nitrogen
B. phosphorous
C. oxygen
D. carbon

116. What kind of plant has nitrogen-fixing bacteria living in their roots?
A. deciduous trees
B. mosses
C. legumes
D. ferns

117.  Phosphorous is released from rocks by which process?
A.  bacterial decomposition
B.  weathering and erosion
C.  photosynthesis
D.  All of these are correct

118. Carbon enters the carbon cycle in the form of
A. lipids formed in photosynthesis.
B. carbonate in rock.
C. atmospheric carbon dioxide.
D. decomposition of organic material.

119. Which of the following is an example of a keystone species?
A. bison
B. sea kelp
C. wolves
D. None of these are correct.

120. Which of the following is an example of a detrital food chain?
A. a coniferous forest
B. sewage treatment plan
C. open lake
D. salt marsh

121. Polyploidy is an evolutionary mechanism that may result in
A. new plant species.
B. a surge in birthrates in mammals.
C. the baldness trait becoming dominant in men.
D. death if recessive.

122. Another name for a nutrient cycle in an ecosystem is a
A. biogeochemical cycle.
B. menstrual cycle.
C. hydrogen cycle.
D. diurnal cycle.

123. This meat eater often gets meat from animals that have died by accident or illness, or were killed by other animals.
A. scavenger
B. omnivore
C. carnivore
D. parasite

124. The introduction of which organism is correlated with a major disruption to the food web of the Great Lakes?
A. diatoms
B. whitefish
C. zebra mussels
D. *Diporeia*.

125. Indian pipe, a flowering plant, lacks chlorophyll and is not able to do photosynthesis. It is a(n):
A. indirect parasite
B. direct parasite
C. host
D. ectoparasite
E. More than one of these choices is correct.

126.  Which of the following types of habitats does NOT have slow decomposition?
A.  tundra
B.  tropical forests
C.  northern forests
D.  grasslands
E.  swamps

127.  \_\_\_\_\_\_ are a major carbon sink.
A.  oceans
B.  lakes
C.  rivers
D.  ponds

128. Phosphorus ions are \_\_\_\_\_\_\_\_ in water and tend to precipitate in the oceans to form sediments that eventually become rock on the ocean floor.
A.  ionic
B.  bionic
C.  soluble
D.  insoluble

129.  Agricultural runoff consists of a mixture of compounds that serve as nutrients. The two primary nutrients are \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.
A.  nitrogen, oxygen
B.  nitrogen, carbon
C.  nitrogen, phosphorus
D.  nitrogen, sulfur