Semester Exam Review Questions

Multipl <i>Identify</i>		Choice choice that best completes the statement or answers the question.
10000000		choice man con compresses me amonem of anomals are question.
	1.	All of the following illustrate exponential growth <i>except</i> a. the king who promised to double the number of grains of wheat he put on each successive square of a checkerboard.
		 b. human population growth. c. driving 10 mph for one minute; then 20 mph for one minute; then 30 mph for one minute; then 40 mph for one minute. d. money in a savings account.
		e. bacteria population growth.
	2.	Exponential growth a. remains constant. b. starts out slowly and remains slow. c. starts out slowly then becomes very rapid. d. starts rapidly and remains rapid. e. stars rapidly and then slows.
	3.	If the world's population grew by 2% in 1998 and continued at that rate, how long would it take Earth's population to double? a. 20 years b. 25 years c. 30 years d. 35 years e. 45 years
	4.	The market value in dollars of goods and services produced in a country for use within a year is the a. gross national product. b. gross domestic product. c. per capital GNP. d. per capita GDP. e. gross growth product.
	5.	You are visiting a developing country. Compared to a developed country, you would expect to find a a. higher percentage of the population with safe drinking water. b. higher percentage of the population under age 15. c. higher average life expectancy. d. more urban population. e. higher percentage of the population over 60.
	6.	Which of the following is <i>not</i> a renewable resource? a. groundwater b. trees in a forest c. fertile soil d. oil e. crops
	7.	 Which of the following statements <i>best</i> illustrates the tragedy of the commons? a. A factory pollutes a river as much as the law allows. b. Some levels of pollution are life threatening. c. Some activities harm the environment, but others do not. d. Irrigated cropland can be ruined by salinization.

	e. Cropland can decrease biodiversity.
8.	New efforts to prevent the tragedy of the commons include
	a. using common-property resources at or above their sustainable yields.
	b. converting land from private to more public ownership.
	c. moving from a taxpayers pay approach to a users pay approach.
	d. moving from a users pay approach to a taxpayers pay approach.
	e. increasing public availability to resources.
9.	The frontier environmental worldview encourages
	a. resource conservation
	b. resource exploitation
	c. decreased pollution
	d. biocentric code of ethic
	e. stewardship of nature
10.	Environmental science integrates knowledge from the disciplines of
 10.	a. chemistry and physics.
	b. ecology.
	c. demography.
	d. economics and politics.
	e. All of these answers.
11.	A synergistic effect
 	a. results in a time delay.
	b. occurs when two or more factors interact to produce a greater effect than each would have
	separately.
	c. induces a positive feedback loop and results in continued interaction.
	d. occurs when two or more factors interact to produce a lesser effect than each would have
	separately.
	e. induces a negative feedback loop and results in continued interaction.
12.	An example of an organic compound would be
	a. H ₂ O
	b. NaCl
	c. H ₂ SO ₄
	$d. N_2O$
	$e. CO_2$
13.	The macromolecules that make up living organisms are
 13.	a. proteins
	b. lipids
	c. carbohydrates
	d. nucleic acids
	e. All of the above.
14.	All of the following are examples of kinetic energy <i>except</i>
 17.	a. a speeding bullet.
	b. a stick of dynamite.
	c. a flow of electric current.
	d. a falling rock.
	e. flowing water.
15	
 15.	Which of the following is an example of low-quality energy? a. electricity
	a. electricityb. heat in the ocean
	c. nuclei of uranium-235
	o. Indulat Of didilidili 455

	d. coal
	e. food
16.	Which of the following statements does <i>not</i> apply to the second law of energy?
	a. Energy conversion results in lower-quality energy.
	b. Energy can neither be created nor destroyed.
	c. Energy conversion results in more-dispersed energy.
	d. Heat is usually given off from energy conversions.
	e. None of these answers.
 17.	The matter and energy laws tell us that we can recycle
	a. both matter and energy.
	b. neither matter nor energy.
	c. matter but not energy.
	d. energy but not matter.
	e. None of these answers.
 18.	Biodiversity is believed to be the result of
	a. divergent and convergent evolution.
	b. speciation and extinction.
	c. speciation and coevolution.
	d. extinction and coevolution.
	e. divergent evolution and coevolution.
 19.	The two most important factors in climate are
	a. temperature and insulation.
	b. precipitation and pressure.
	c. humidity, clouds, and wind.
	d. temperature and precipitation.
20	e. humidity and precipitation.
 20.	Climate is influenced by
	a. the amount of incoming solar radiation.
	b. earth's rotation.c. the tilt of earth's axis.
	d. the moon's gravity.
	e. All of these answers.
21.	
 21.	There are separate belts of moving air or prevailing winds. a. two
	b. four
	c. six
	d. eight
	e. nine
22.	The rain shadow effect refers to
 22.	a. more light on the windward side of mountain ranges.
	b. more light on the leeward side of mountain ranges.
	c. drier conditions on the windward side of mountain ranges.
	d. drier conditions on the leeward side of mountain ranges.
	e. wetter conditions on the windward side of mountain ranges.
23.	The <i>most</i> important factor in determining which biome is found in a particular area is
	a. soil type.
	b. topography.
	c. magnetic fields.
	d. climate.

	e. sunlight.
 24.	Generally, the limiting factor that controls the vegetative character of a biome is
	a. light.
	b. precipitation.
	c. nutrients.
	d. soil type.
	e. temperature.
25.	Climate and vegetation vary with
 25.	a. latitude only.
	b. altitude only.
	d. latitude and longitude.
2.5	e. altitude and longitude.
 26.	The biome <i>most</i> likely to be found on the top of a very tall tropical mountain is the
	a. desert.
	b. tundra.
	c. grassland.
	d. temperate deciduous forest.
	e. savanna.
 27.	Trees of wet tropical rain forests tend to be
	a. succulent plants.
	b. broad-leaf evergreen plants.
	c. broadleaf deciduous plants.
	d. coniferous evergreen plants.
	e. coniferous deciduous plants.
28.	A desert is an area where
 20.	a. evaporation is slow.
	b. average annual precipitation is less than 10 inches.
	c. most vegetation consists of grass.
	d. most organisms are active during the day.
	e. most organisms are active during the night.
20	
 29.	The primary limiting factor of the rain forest is
	a. water.
	b. soil nutrients.
	c. temperature.
	d. light.
	e. wind.
 30.	A mature has the greatest species diversity of all terrestrial biomes.
	a. tundra
	b. tropical rain forest
	c. taiga
	d. temperate deciduous forest
	e. savanna
 31.	In your explorations as a marine biologist, you find a new species of algae floating on the surface of a coastal
	zone. You would most likely classify this species as
	a. phytoplankton.
	b. zooplankton.
	c. benthos.
	d. nekton.

	e. decomposer.
 32.	Populations of organisms living in aquatic life zones may be limited by
	a. access to light.
	b. nutrient availability.
	c. dissolved oxygen.
	d. All of these answers.e. None of these answers.
22	
 33.	
	a. 50%b. 60%
	c. 70%
	d. 80%
	e. 90%
34.	The ocean zone that covers the continental shelf is the
	a. estuary.
	b. coastal zone.
	c. littoral zone.
	d. benthic zone.
	e. abyssal zone.
 35.	Estuaries and coastal wetlands are important for all of the following reasons <i>except</i>
	a. spawning and nursery grounds for marine fish and shellfish.
	b. filtering out waterborne pollutants from swimming and wildlife areas.
	c. breeding grounds for waterfowl.
	d. providing coral for limestone production and the tourist trade.e. habitat for alligators.
36.	Which of the following trees is characteristic of tropical coastal wetlands?
 30.	a. cypress
	b. coconut
	c. mangrove
	d. palm
	e. live oak
 37.	In terms of biodiversity, the tropical rain forest is to land environments as is to water environments
	a. the abyssal zone
	b. the bathyal zone
	c. the euphotic zone
	d. the coral reef
20	e. the benthic zone
 38.	The <i>least</i> appropriate use of coastal wetlands is for
	a. spawning and nursery grounds.b. condominiums and disposal of landfill waste.
	c. food production.
	d. recreational diving.
	e. educational activities.
39.	Most photosynthesis in the open sea occurs in the
57.	a. euphotic zone.
	b. abyssal zone.
	c. bathyal zone.
	d. coastal zone.
	e. benthic zone.

 40.	In lakes, large numbers of decomposers are found in the
	a. limnetic zone.
	b. benthic zone.
	c. littoral zone.
	d. profundal zone.
	e. abyssal zone.
 41.	In lakes, the nutrient-rich water near the shore is part of the
	a. limnetic zone.
	b. benthic zone.
	c. littoral zone.
	d. profundal zone.
	e. abyssal zone.
 42.	Lakes that have few minerals and low productivity are referred to as
	a. autotrophic.
	b. eutrophic.
	c. oligotrophic.
	d. mesotrophic.
	e. oligomesotrophic.
 43.	Where is most of the world's biodiversity?
	a. high-latitude forests
	b. middle-latitude grasslands
	c. low-latitude forests
	d. polar grasslands
	e. tundra
 44.	Which of the following predators avoid competition by being active at different times?
	a. lions and tigers
	b. hummingbirds and bees
	c. hawks and owls
	d. zebras and antelopes
	e. lions and cheetahs
 45.	The relationship between fire ants and native ant populations is best described as
	a. mutualism.
	b. commensalism.
	c. intraspecific competition.
	d. interspecific competition.
	e. parasitism.
 46.	The obvious relationship demonstrated by a food chain is
	a. competition.
	b. predation.
	c. parasitism.
	d. mutualism.
	e. commensalism.
 47.	e. commensalism.A relationship in which both species benefit is best labeled
 47.	e. commensalism.A relationship in which both species benefit is best labeleda. competition.
 47.	e. commensalism.A relationship in which both species benefit is best labeleda. competition.b. predation.
 47.	 e. commensalism. A relationship in which both species benefit is best labeled a. competition. b. predation. c. mutualism.
47.	 e. commensalism. A relationship in which both species benefit is best labeled a. competition. b. predation. c. mutualism. d. parasitism.
 47. 48.	 e. commensalism. A relationship in which both species benefit is best labeled a. competition. b. predation. c. mutualism.

	a. cooled volcanic lava
	b. an abandoned parking lot
	c. a heavily polluted stream that has been cleaned up
	d. a bare rock outcrop
	e. a newly created shallow pond
49.	The biotic potential of a population
	a. is the maximum reproductive rate of a population.
	b. is the current rate of growth of a population.
	c. is an expression of how many offspring survive to reproduce.
	d. can be determined only by studying an age structure diagram.
	e. is the future rate of growth of a population.
50.	A single factor that limits the growth, abundance, or distribution of a species in an ecosystem is called
20.	a. biotic potential
	b. carrying capacity
	c. a limiting factor
	d. environmental resistance
	e. the intrinsic rate of growth
51	K-strategists
 51.	a. have high genetic diversity.
	b. are more responsive to environmental changes than r-strategists.
	c. exhibit fast rates of evolution.
	d. are generally less adaptable to change than r-strategists.
	e. reach reproductive age rapidly.
52.	The human population has grown exponentially over the last 200 years due to
 32.	a. medical advances.
	b. expansion of agriculture.
	c. increased industrial production.
	d. improved hygiene.
	e. All of the above.
53.	The highest crude birth rate and crude death rate are in
 55.	a. Africa.
	b. Latin America.
	c. Asia.
	d. Europe.
	e. Oceania.
54.	Total fertility rate is
 J - 1.	a. the number of children born to a woman during her lifetime
	b. the number of children a couple must bear to replace themselves
	c. the average number of children a woman typically has during her reproductive years
	d. the number of live births per 1000 people
	e. the births and immigration into a population minus the deaths and emigration
55.	Infant mortality rate refers to the number of children out of 1,000 that die
 55.	
	a. before birth.b. in their first month.
	c. in the first half-year of life.
	d. by their first birthday.
	e. by their 5 th birthday.
56	
 56.	Population age structure diagrams can be divided into all of the following categories <i>except</i>
	a. infant.

	b. prereproductive.
	c. reproductive.
	d. postreproductive.
	e. a and b.
57.	The term <i>demographic transition</i> refers to
 57.	
	a. a requirement for a population to reach a specific size before it becomes stable.
	b. the slowing down in the growth of a population as it approaches the carrying capacity.
	c. the decline in death rates followed by decline in birth rates when a country becomes
	industrialized.
	d. the decline in death rates followed by a decline in birth rates that occurred when the germ
	theory of disease was discovered.
	e. All of these answers.
58.	Clear-cutting on a large scale leads to
	a. erosion and water pollution.
	b. flooding.
	c. habitat fragmentation.
	d. loss of biodiversity.
	e. All of these answers.
50	
 59.	The demand for wood could be reduced by
	a. using laminated boards.
	b. using paper from fibers obtained from plants other than trees.
	c. reducing construction waste and junk mail.
	d. All of these answers.
	e. None of these answers.
 60.	All of the following characteristics would make a species more prone to extinction <i>except</i>
	a. low population density.
	b. small body size.
	c. specialized niche.
	d. low reproductive rate.
	e. fixed migratory patterns.
61.	Habitat fragmentation
	a. can create barriers that limit the ability of species to find food and mates.
	b. increases edge areas that make some species more vulnerable to predators.
	c. may create habitats too small to support the minimum breeding population of some
	species.
	d. may limit the ability of some species to disperse and colonized new areas.
	e. All of these answers.
60	
 62.	•
	a. violators receiving only small fines.
	b. spotty enforcement.
	c. member countries exempting themselves from protecting some species.
	d. much of the illegal trade in wildlife goes on in countries that have not signed the treaty
	e. All of these answers.
 63.	Animals listed as endangered or threatened cannot be in the United States.
	a. injured
	b. hunted
	c. collected
	d. killed
	e. any of the above
	•

	64.	The hydrologic cycle will naturally purify and recycle fresh water as long as humans don't
		a. pollute the water faster than it is replenished.
		b. withdraw water from groundwater supplies faster than it is replenished.
		c. overload it with slowly degradable and nondegradable wastes.
		d. a and b only.
		e. All of these answers.
	65.	Which of the following statements is <i>false</i> ?
		a. Recharging of water is a slow process.
		b. The water table moves down in dry weather.
		c. Water in a confined aquifer is under pressure.
		d. Groundwater is stationary and does not move.
		e. The water table is located at the top of the zone of saturation.
	66.	Throughout the world, the <i>most</i> water is used for
		a. irrigation.
		b. industrial processes.
		c. needs of animals and humans.
		d. transportation.
		e. cooling towers of power plants.
	67.	The largest use of water in the western United States is
		a. energy production.
		b. cooling.
		c. irrigation.
		d. hosing down livestock pens.
		e. manufacturing.
	68.	The term subsidence refers to
		a. failure of the groundwater supply.
		b. accumulation of silt behind a dam.
		c. sinking of ground when water has been withdrawn.
		d. intrusion of salt water into a freshwater aquifer.
	60	e. loss of water due to evaporation.
	69.	Saudi Arabia gets about 70% of its drinking water from
		a. deep aquifers
		b. water imports
		c. rainfall
		d. desalination e. lakes and rivers
	70	
	70.	Large dams and reservoirs
		a. reduce danger of flooding upstream.b. are inexpensive to build.
		b. are inexpensive to build.c. cannot be used for outdoor recreation.
		d. can be used to provide electric power.
		e. All of these answers.
	71	
	71.	Most water-transfer projects illustrate a. the climate-biome principle.
		a. the climate-biome principle.b. the principle that you can't do just one thing.
		c. the concept of ecological succession.
		d. the principle of genetic variability.
		e. energy is conserved.
	72.	People have often settled on floodplains because
	, 2.	1 top 10 miles of the or the original occurse

	 a. the soil is fertile. b. the flat surfaces are ideal for buildings. c. they want access to water for irrigation and transportation. d. the flat surfaces are ideal for railroads. e. All of these answers.
73.	
74.	Sustainable use of water involves a. participatory decision making. b. preservation of ecological integrity of water supply systems. c. efficient use of water. d. integrated governance of water pollution. e. All of these answers.
75.	Of the following organisms, the group that is <i>least</i> likely to cause disease is a. bacteria. b. protozoa. c. algae. d. parasitic worms. e. viruses.
76.	A body of water can be depleted of its oxygen by a. viruses and parasitic worms. b. organic wastes. c. sediments and suspended matter. d. organic compounds such as oil, plastics, solvents, and detergents. e. All of these answers.
77.	Thermal pollution a. raises the solubility of oxygen in water. b. lowers the respiratory rates of aquatic organisms. c. nurtures spawning fish. d. can kill organisms adapted to a particular temperature range by thermal shock. e. All of these answers.
78.	Oxygen sag curves a. may occur during spring floods. b. occur when oxygen-demanding wastes are added to the water. c. develop in fast-flowing rivers. d. may occur upstream from a sewage treatment plant. e. All of these answers.
79.	The leading nonpoint source of water pollution is a. municipal landfills. b. runoff from city streets and storm sewers. c. agriculture. d. industrial wastes. e. leaks from offshore oil wells.
80.	Which of the following substances are removed to the greatest extent by combined primary and secondary wastewater treatment?

- a. organic pesticides
- b. organic oxygen-demanding wastes
 c. toxic metals and synthetic organic chemicals
 d. radioactive isotopes
- e. All of these answers.

Semester Exam Review Questions Answer Section

MULTIPLE CHOICE

1	A NICL	C .	OTTC.	1	DIE.	M		
1.	ANS:	Population Grov	PTS:		DIF:	M Economic Dev	elonme	ant
2	ANS:	_	wui, E PTS:		DIF:		Clopine	Sift.
۷.		Population Grov					elonme	ent
3.	ANS:	-	eTS:		DIF:		Сторик	
٥.		Population Grov					elonme	ent
4	ANS:	_	PTS:		DIF:		Стории	
••		Population Grov					elonme	ent
5.	ANS:	_	PTS:			M	1	
		Population Grov					elopme	ent
6.	ANS:	_	PTS:		DIF:	Е	_	Resources
7.	ANS:	A F	PTS:	1	DIF:	D	TOP:	Resources
8.	ANS:	C F	PTS:	1	DIF:	D	TOP:	Resources
9.	ANS:	В	PTS:	1	DIF:	E		
	TOP:	Cultural Change	es and	the Environme	ent			
10.	ANS:	E F	PTS:	1	DIF:	E	TOP:	Models and Behavior of Systems
11.	ANS:	B F	PTS:	1	DIF:	D	TOP:	Models and Behavior of Systems
12.	ANS:	E F	PTS:	1	DIF:	M	TOP:	Types and Structure of Matter
13.	ANS:	E F	PTS:	1	DIF:	E	TOP:	Types and Structure of Matter
14.	ANS:	B F	PTS:	1	DIF:	M	TOP:	Energy
15.	ANS:	B F	PTS:	1	DIF:	M	TOP:	Energy
16.	ANS:	B F	PTS:	1	DIF:	D		
	TOP:	Energy Laws: T	wo Ru	ıles We Canno	t Break			
17.	ANS:	C F	PTS:	1	DIF:	M		
		Energy Laws: T						
18.	ANS:		PTS:		DIF:	M		
		Speciation, Exti		, and Biodivers	-			
	ANS:			1	DIF:	M		Climate: A Brief Introduction
	ANS:			1	DIF:	M		Climate: A Brief Introduction
	ANS:			1	DIF:	E		Climate: A Brief Introduction
	ANS:			1	DIF:	M		Climate: A Brief Introduction
	ANS:			1	DIF:	E		Biomes: Climate and Life on Land
	ANS:		PTS:	1	DIF:	E		Biomes: Climate and Life on Land
	ANS:			1	DIF:	E		Biomes: Climate and Life on Land
26.	ANS:			1	DIF:	E		Biomes: Climate and Life on Land
27.	ANS:			1	DIF:	M		Biomes: Climate and Life on Land
28.	ANS:			1	DIF:	E		Desert Biomes
29.	ANS:			1	DIF:	E		Forest Biomes
	ANS:			1	DIF:	M		Forest Biomes
31.	ANS:			1	DIF:	M		Aquatic Environments
32.	ANS:			1	DIF:	M		Aquatic Environments
33.	ANS:	C F	PTS:	1	DIF:	E	TOP:	Saltwater Life Zones

2.4	ANIC	D DTTC	1 DIE	Г	TOD	
	ANS:			E		Saltwater Life Zones
	ANS:			M		Saltwater Life Zones
	ANS:			E		Saltwater Life Zones
	ANS:		1 DIF:	M		Saltwater Life Zones
38.	ANS:	B PTS:	1 DIF:	E	TOP:	Saltwater Life Zones
39.	ANS:	A PTS:	1 DIF:	E	TOP:	Saltwater Life Zones
40.	ANS:	B PTS:	1 DIF:	E	TOP:	Freshwater Life Zones
41.	ANS:	C PTS:	1 DIF:	E	TOP:	Freshwater Life Zones
42.	ANS:	C PTS:	1 DIF:	M	TOP:	Freshwater Life Zones
43.	ANS:	C PTS:	1 DIF:	M		
	TOP:	Community Structure	and Species Diversi	ty		
44.	ANS:	· · · · · · · · · · · · · · · · · · ·	-	-		
		Species Interactions:	Competition and Pred	dation		
45.	ANS:	-	_			
		Species Interactions:		dation		
46.	ANS:					
		Species Interactions:				
47.	ANS:	•	-			
		Species Interactions:			salism	
48.	ANS:	•				
		Ecological Succession				
49.	ANS:	· ·				
17.		Population Dynamics				
50	ANS:			-		
20.		Population Dynamics				
51	ANS:	-		•	TOP·	Reproductive Patterns
	ANS:				101.	reproductive ratterns
32.		Human Population Gr				
53	ANS:	-		-		
55.		Factors Affecting Hu		Ь		
54	ANS:		-	Е		
J T .		Factors Affecting Hu		L		
55	ANS:		_	Е		
33.		Factors Affecting Hu		L		
56	ANS:	•	•	Е	TOP.	Population Age Structure
	ANS:			M	101.	1 opulation rige structure
37.		Solutions: Influencing		171		
58	ANS:	-	-	M	TOP:	Managing and Sustaining Forests
	ANS:				101.	Wanaging and Sustaining Polests
39.		Solutions: Certifying		M Simbor		
60			•		TOD.	Species Entiretien
	ANS:			D	TOP:	Species Extinction
01.	ANS:					
<i>(</i> 2		Habitat Loss, Degrada	~			
02.	ANS:					
62		Protecting Wild Speci				
03.	ANS:					
61		Protecting Wild Speci	-			
04.	ANS:	E PTS:	1 DIF:	1 VI		

	TOP:	Water's Impor	tance, A	Availability, an	d Rene	wal		
65.	ANS:	D	PTS:	1	DIF:	D		
	TOP:	Water's Impor	tance, A	Availability, an	d Rene	wal		
66.	ANS:	A	PTS:	1	DIF:	M		
	TOP:	Water's Impor	tance, A	Availability, an	d Rene	wal		
67.	ANS:	C	PTS:	1	DIF:	M		
	TOP:	P: Water's Importance, Availability, and Renewal						
68.	ANS:	C	PTS:	1	DIF:	M		
	TOP:	Withdrawing Groundwater to Increase Supplies						
69.	ANS:	D	PTS:	1	DIF:	E		
	TOP:	Withdrawing Groundwater to Increase Supplies						
70.	ANS:	D	PTS:	1	DIF:	M		
	TOP:	Using Dams and Reservoirs to Supply More Water						
71.	ANS:	В	PTS:	1	DIF:	M		
	TOP:	Transferring Water From One Place to Another						
72.	ANS:	E	PTS:	1	DIF:	D	TOP:	Too Much Water
73.	ANS:	E	PTS:	1	DIF:	D	TOP:	Too Much Water
74.	ANS:		PTS:		DIF:	D		
	TOP:	Solutions: Using Water More Sustainably						
75.	ANS:	C	PTS:	1	DIF:	E		
	TOP: Water Pollution: Source, Types, and Effects							
76.	ANS:		PTS:		DIF:			
		Water Pollution: Source, Types, and Effects						
77.	ANS:		PTS:		DIF:			
		P: Water Pollution: Source, Types, and Effects						
78.	ANS:	В	PTS:	1	DIF:	E	TOP:	Pollution of Freshwater Streams
79.	ANS:		PTS:			E		
		Preventing and Reducing Surface Water Pollution						
80.	ANS:		PTS:		DIF:			
	TOP:	Preventing and	d Reduc	cing Surface W	ater Po	llution		