

1.	Which of the terms below refers to the farming of marine organisms:
a)	forage crops
b)	subsistence crops
c)	aquaculture
d)	mariculture
e)	agriculture
	Ans: d Difficulty: Easy Link to: 11.3

2.	Which of the terms below refers to crops grown as food for domestic animals?
a)	forage crops
b)	subsistence crops
c)	aquaculture
d)	mariculture
e)	agriculture
	Ans: a Difficulty: Easy Link to: 11.3

3.	Which of the terms below refers to the farming of foods in marine and freshwater habitats:
a)	forage crops
b)	subsistence crops
c)	aquaculture
d)	mariculture
e)	agriculture
	Ans: c Difficulty: Easy Link to: 11.3

4.	About 11% of the Earth's surface (excluding Antarctica) is under agriculture. In simple terms, if the world's human population doubles in the future, then either the total agricultural acreage must double or else _____ must double.
a)	death rates
b)	deforestation
c)	birth rates

d)	global precipitation
e)	agricultural yields per acre
	Ans: e Difficulty: Medium Link to: 11.7

5.	Which of the following would lead to a significant increase in per capita demand for food worldwide?
I.	lower food prices
II.	an increase in personal income of the richest 5% of a population
III.	rising expectations of the populace
a)	I only
b)	II only
c)	I and II
d)	I and III
e)	I, II, and III
	Ans: d Difficulty: Medium Link to: 11.7

6.	Which of the following refers to lack of a specific chemical component of food:
a)	malnourishment
b)	famine
c)	undernourishment
d)	miasma
e)	nonnourishment
	Ans: a Difficulty: Easy Link to: 11.2

7.	Crops grown as food for domestic animals are called:
a)	domestic crops
b)	range land crops
c)	forage crops
d)	agricrops
e)	subsistence crops

	<p>Ans: c Difficulty: Easy Link to: 11.3</p>
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8.	What is the relationship between farming and ecological succession:
a)	farming keeps the land in a late successional stage
b)	farming abbreviates succession, skipping the middle stage
c)	farming promotes the premature change to late successional stage
d)	farming keeps the land in an early successional stage
e)	land succession is a process in natural ecosystems, and crop land cannot be discussed in the same terms
	<p>Ans: d Difficulty: Medium Link to: 11.1</p>

9.	Monoculture is associated with:
a)	gain of chemical elements in the soil
b)	decreased likelihood of crop diseases
c)	constant agro-ecosystem
d)	decreases in organic matter in the soil
e)	a high variety of crops produced
	<p>Ans: d Difficulty: Easy Link to: 11.3</p>

10.	Global warming (also see Chapter 21) may have profound consequences on the Earth's ability to produce food. Which of the following is considered the most likely impact of global warming:
a)	it will increase average food production worldwide
b)	it will decrease average food production worldwide
c)	it will shift zones of food production and cause local disruption
d)	it will reduce human reliance on irrigation
e)	it will increase soil erosion worldwide
	<p>Ans: c Difficulty: Medium Link to: 11.12</p>

11.	Eating low on the food chain is more efficient than eating high on it. However according to the <u>Environmental Science</u> text, conversion of all present rangeland to crop land would <u>increase</u> environmental damage because:
a)	agriculture contributes methane, a greenhouse gas, to the atmosphere, but grazing does not
b)	contrary to common belief, grazing is beneficial to the environment, increasing ecological diversity and resilience
c)	the process of land conversion itself is more damaging than any single, sustained type of land-use
d)	not all land is suitable for agriculture; some is better suited to grazing
e)	agriculture requires clearing of the land, whereas grazing cattle can be done without clearing sensitive tropical forests
	Ans: d Difficulty: Difficult Link to: 11.10

12.	Econuts will grow in great abundance in the presence of certain minimum amounts of sunlight, water, and nitrogen in the soil. Industrial Farms Inc. has abundant sunlight and water, but terrible yields of econuts. What is the technical term for nitrogen in this example:
a)	limiting factor
b)	synergism
c)	base resource
d)	artificial fertilizer
e)	a Liebeg
	Ans: a Difficulty: Medium Link to: 11.5

13.	Hydroponics refers to:
a)	monocultures that satisfy the per-capita food demand of a nation
b)	the growing of plants in a fertilized water solution on an artificial substrate
c)	the application of water and fertilizer to the soil from tubes that sprays this mixture in form of a fine mist
d)	fish farming making use of treated sewage
e)	anthropogen invented crop culture

	<p>Ans: b Difficulty: Easy Link to: 11.7</p>
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14.	The majority of the world's food supply is obtained by:
a)	cattle ranching
b)	agriculture
c)	fishing and aquaculture in oceans and freshwater lakes
d)	hunting and gathering
e)	industrial production
	<p>Ans: c Difficulty: Easy Link to: 11.3</p>

15.	Agriculture where a mixture of crops is utilized, including root, stem, and fruit crops is called:
a)	bush fallow
b)	milpa agriculture
c)	swidden agriculture
d)	fang agriculture
e)	all of these
	<p>Ans: e Difficulty: Easy Link to: A Closer Look 11.1</p>

16.	Irrigation of plants refers to:
a)	artificial addition of fertilizers
b)	the spraying of pesticides
c)	the crossing of one or more varieties of species to produce an offspring with particular desired qualities
d)	artificial addition of water
e)	the growing of plants in a nutrient rich solution
	<p>Ans: d Difficulty: Easy Link to: 11.7</p>

17.	The reason that weeds compete so effectively against agricultural crops and must be inhibited or removed is that:
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a)	weeds are early successional species and naturally do well on cleared land
b)	weeds try to restore the genetic variability lacking in monoculture
c)	weeds are more deeply rooted than crop plants and monopolize soil water
d)	weeds do not require the trace elements that limit the growth of crops
e)	herbicides are ineffective against most modern strains of weeds
Ans: a Difficulty: Medium Link to: 11.6, chapter 19	

18.	Plowing, the regular mixing of the top layer of the soil, is precisely like what natural process:
a)	glacial action
b)	flooding
c)	wind erosion
d)	earthquakes
e)	no natural process is much like plowing
Ans: e Difficulty: Easy Link to: 11.6	

19.	Which of the following is not a water-saving irrigation method?
a)	drip irrigation
b)	night time irrigation
c)	surge flow
d)	mulching
e)	all of these <u>are</u> water-saving irrigation methods
Ans: d Difficulty: Medium Link to: Critical Thinking	

20.	Increased production of food in the past has depended on _____ and _____.
a)	improving weather conditions, genetically engineered crops
b)	improved soil types, cash crops
c)	expanded irrigation, growing use of fertilizer

d)	critical trace elements, hydroponics
e)	increased soil age, high-yield crop strains
	Ans: c Difficulty: Easy Link to: 11.6

21.	Agriculture in less developed countries can be significantly affected by all of the following except:
a)	social disruptions
b)	droughts
c)	loss of soil organic matter and accumulation of chemical compounds
d)	insect infestations
e)	crop circles
	Ans: e Difficulty: Medium Link to: 11.3

22.	Aquaculture refers to:
a)	the production of flood-resistant crops
b)	the production of rice and other water-growing crops
c)	the production of aquatic animals for food
d)	open-ocean fishing
e)	the development of coastal tourist resorts
	Ans: c Difficulty: Easy Link to: 11.3

23.	According to the <u>Environmental Science</u> text, what is the key to food production in the future?
a)	increased usage of fertilizers
b)	increased food production per unit area
c)	increased water availability
d)	conversion of forests to crop lands
e)	introduction of macronutrients to the soil
	Ans: b Difficulty: Easy Link to: 11.6

24.	Monoculture production of crops is more vulnerable to outbreaks of disease because this type of farming:
a)	requires increased irrigation
b)	simplifies the ecosystem
c)	increases the diversity of pests
d)	causes soil erosion
e)	enriches the local floras by introducing fertilizers
	Ans: b Difficulty: Medium Link to: 11.9

25.	Liebig's "Law of the Minimum" says that
a)	missing macronutrients contribute to the growth of crop species
b)	the limiting factor in agriculture can be overcome by simply applying fertilizers
c)	only limited application of fertilizers is beneficial to the growth of a crop species
d)	some single factor determines the presence and growth of a given species
e)	the lowest yielding crop species is the most sustainable
	Ans: d Difficulty: Easy Link to: 11.5

26.	When did a shift from resource-based agriculture to demand-based agriculture happen
a)	10,000 years ago
b)	during the 20 <sup>th</sup> century
c)	during the Middle Ages
d)	during the industrial revolution
e)	agriculture was always demand-based
	Ans: d Difficulty: Easy Link to: 11.6



27.	The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year. Given only this information, when should there be a food shortage on the island?
a)	never
b)	in 10 years
c)	in 15 years
d)	in 20 years
e)	in 25 years
	Ans: d Difficulty: Difficult Link to: 11.1, 11.3

28.	Goals for genetic engineering of crop species include all of the following except:
a)	plants with nitrogen-fixing ability
b)	plants that spread freely to any and all open land
c)	higher yields
d)	plants with greater resistance to cold
e)	plants with greater resistance to heat and drought
	Ans: b Difficulty: Easy Link to: 11.11

29.	What is the most important cause of starvation worldwide?
a)	droughts
b)	inadequate distribution of food resources
c)	floods
d)	global warming
e)	genetically engineered crops replacing local crops
	Ans: b Difficulty: Medium Link to: 11.4

30.	What is the main effect of year-to-year variability in climate on the ability of a county to feed its population?
a)	variable climates deplete soil of its fertility
b)	food supply may be adequate in normal years, but periodic subaverage years may cause famine

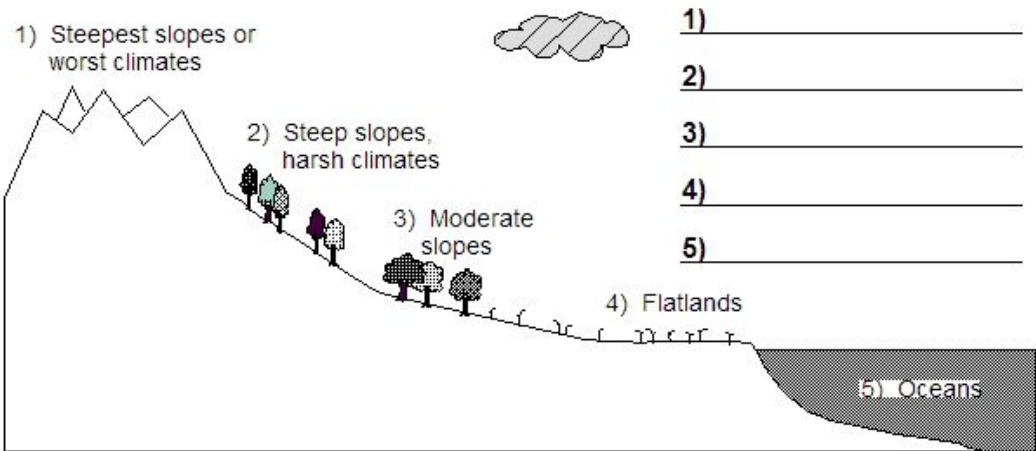
c)	variable climates are dryer than more steady ones
d)	countries with more variable climates have better distribution systems for food
e)	variable climates cause severe sediment pollution

Ans: b  
 Difficulty: Medium  
 Link to: 11.12

31.	Aquaculture includes all of the following examples except:
a)	harvesting shellfish from offshore oil-drilling platforms
b)	growing rice in fields covered by water
c)	raising shrimp in carefully tended ponds
d)	growing oysters and mussels on rafts lowered into the ocean
e)	raising fish in flooded rice fields

Ans: b  
 Difficulty: Easy  
 Link to: 11.3

32.	In the figure below, suggest an appropriate type of productive land use (productive for humans) for each of the five numbered settings.
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Ans: 1) little or no appropriate agriculture  
 2) forestry, etc.  
 3) grazing, orchards  
 4) crop lands  
 5) mariculture, fishery

Difficulty: Medium  
 Link to: 11.1

33.	To date, increases in crop yields were achieved largely by increased application of artificial fertilizer. However we may have reached the limits of gains from this method. List two other methods that may lead to increased crop yields.	
Ans:	new high-yield crop strains improved irrigation techniques hydroponics	
	Difficulty: Medium Link to: 11.7	

34.	Two varieties of aquaculture were mentioned in the textbook. List them and name two species produced by each type.	
Ans:	Freshwater aquaculture -- catfish, shrimp, silkworms, etc. Mariculture -- oysters, other shellfish, etc.	
	Difficulty: Medium Link to: 11.3	

35.	Explain why older soils are more likely to lack trace elements that are vital for agriculture.	
Ans:	As a soil ages, its supply of chemical elements tends to be leached out by water from the upper layers to deeper layers below the reach of crop roots.	
	Difficulty: Medium Link to: 11.5	

36.	On global, national, and local scales, what three main factors lead to the problem of widespread malnutrition in the modern world?	
Ans:	population growth, inadequate distribution of available food wars and political disruptions	
	Difficulty: Medium Link to: 11.2	

37.	Why are older soils more likely to lack nutrients necessary for many crops?	
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Ans:	As a soil ages, its supply of chemical compounds tends to be leached by water from the upper layers to deeper layers.
	Difficulty: Easy Link to: 11.5

38.	Crop rotation is a technique to counteract a negative effect of monoculture agriculture. What is the benefit of crop rotation?
Ans:	replenishes soil nutrients
	Difficulty: Easy Link to: 11.9

39.	The <u>Environmental Science</u> text lists several qualities of organic farming, Name two of these qualities.
Ans:	It is more like natural ecosystems than monocultures It minimizes negative environmental impacts The food that results from it does not contain artificial compounds
	Difficulty: Easy Link to: 11.8

40.	List two reasons why Africa remains the continent with the most acute food shortages in the world?
Ans:	Because of adverse weather conditions (e.g., droughts) and civil problems (e.g., war)
	Difficulty: Easy Link to: A Closer Look 11.1

41.	What is the difference between pasture land and rangeland?
Ans:	Pastures are planted with forage plants for animals while range lands are not planted. The animals feed on whatever plants grow of their own accord.
	Difficulty: Easy Link to: 11.10

42.	List the three major aspects of the relation between world food supply and the environment.
Ans:	food production depends on the environment agriculture changes the environment significantly the modern food problem is the result of the great increase in human population and its influence on the environment
	Difficulty: Easy Link to: 11.1

43.	The current population of Demographica Island is 10 million inhabitants, and the population is doubling every 10 years. Current agriculture on Demographica could feed 20 million people, and technological improvement is expanding that capacity by 1 million every year. Given only this information, is there a problem in the future of the island? If so, when?
Ans:	yes, there will be food shortage in 20 years
	Difficulty: Medium Link to: Case Study

44.	What is the major drawback of food aid programs to less developed countries?
Ans:	Food aid can lower local food prices and reduce local food production. Free food undercuts the local farmers.
	Difficulty: Medium Link to: 11.2

45.	Farming greatly simplifies ecosystems, creating short and simple food webs. The simplicity of these ecosystems is their weakness. Explain briefly how the ecosystems are weaker.
Ans:	It makes the system highly vulnerable to the outbreak of diseases, undesired competitors, and herbivores.
	Difficulty: Medium Link to: 11.1

46.	What is monoculture, what are the drawbacks of monoculture, and how can these drawbacks be counteracted?
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Ans:	In monoculture large areas are planted with a single species. It makes the entire crop vulnerable to attack by a single disease or a single change in environmental conditions. It can be counteracted by crop rotation or to a certain extent by artificial fertilizers.
	Difficulty: Medium Link to: 11.9

47.	Describe the characteristics of land considered to be marginal for agriculture.
Ans:	it has poor soil it lies on steep slopes or is otherwise difficult to access it has high erosion rates it lacks of water
	Difficulty: Medium Link to: 11.5

48.	The two kinds of food insufficiency are undernourishment and malnourishment. Define each one.
Ans:	undernourishment: lack of sufficient calories in the available food. malnourishment: lack of specific compounds of food (e.g. lack of protein, a vitamin or an essential chemical element)
	Difficulty: Easy Link to: 11.2

49.	What is an "agricultural limiting factor"?
Ans:	a single requirement for growth that is in the least supply compared to the need of the crop
	Difficulty: Easy Link to: 11.5