Montgomery Academy Geography Dept.

Name: _____

Previous Score: _____/100 **New Score:** _____/100

Ecosystems

Multiple choice knowledge checker

1.	What is an ecosystem?	
○	A.	A community of plants and animals sharing an environment with non-living things.
○	B.	The flow of energy between living organisms.
○	C.	A physical feature of the world.
○	D.	The pathways through which nutrients are constantly recycled.

2.	Which of the following statements is true?	
○	A.	The term biotic relates to all living organisms within an ecosystem such as plants and animals. Abiotic elements are the non-living features such as soil, rocks and the climate.
○	B.	The term abiotic relates to all living organisms within an ecosystem such as plants and animals. Biotic elements are the non-living features such as soil, rocks and the climate.

3.	Which of the following is a characteristic of a producer in an ecosystem?	
○	A.	They are herbivores which means they only eat plants.
○	B.	They are carnivores.
○	C.	They produce their own food through photosynthesis.
○	D.	They break down dead plants and animals

4.	Which of the following is a characteristic of a primary consumer in an ecosystem?	
○	A.	They are herbivores which means they only eat plants.
○	B.	They are carnivores.
○	C.	They produce their own food through photosynthesis.
○	D.	They break down dead plants and animals

5.	Which of the following is a characteristic of a secondary consumer in an ecosystem?	
○	A.	They are herbivores which means they only eat plants.
○	B.	They are carnivores.
○	C.	They produce their own food through photosynthesis.
○	D.	They break down dead plants and animals

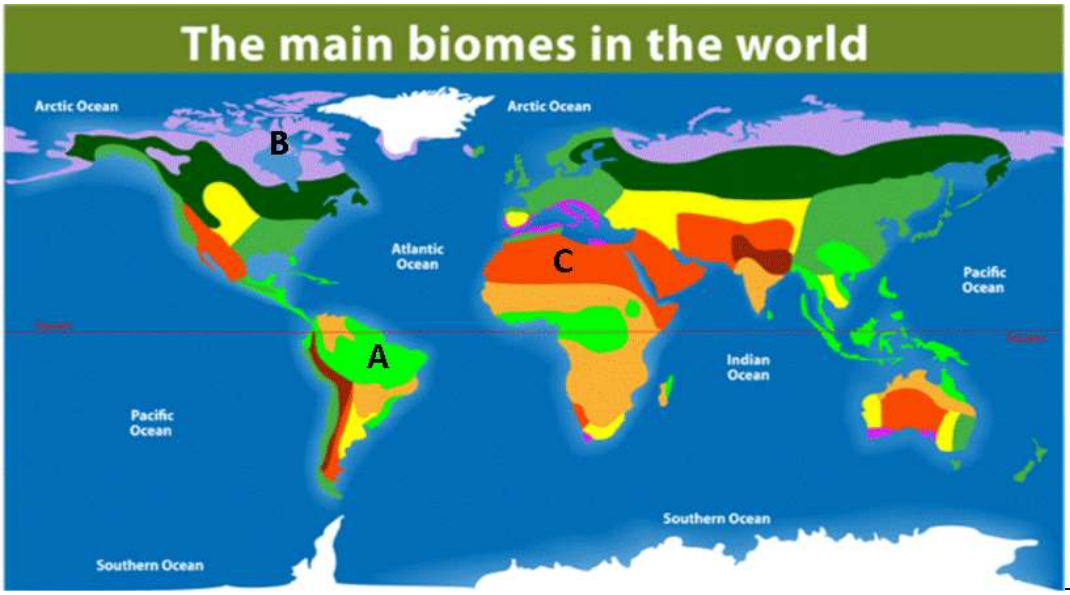
6.	Which of the following is a characteristic of decomposers in an ecosystem?	
○	A.	They are herbivores which means they only eat plants.
○	B.	They are carnivores.
○	C.	They produce their own food through photosynthesis.
○	D.	They break down dead plants and animals

7.	True or false? Decomposers are very important for any ecosystem. If they weren't in the ecosystem the plants would not get essential nutrients and dead matter and waste would gather.	
○	A.	True
○	B.	False

8.	What is a food chain?	
○	A.	A community of plants and animals sharing an environment.
○	B.	The transfer of nutrients in an ecosystem.
○	C.	A global scale ecosystem. Also known as a biome.
○	D.	A series of organisms each dependent on the next as a source of food.

9.	True or false? A food web shows lots of food chains and how they overlap	
○	A.	True
○	B.	False

10.	What is the transfer of nutrients through an ecosystem is known as?	
○	A.	Food chain
○	B.	Food web
○	C.	The nutrient cycle
○	D.	A biome



11.	Identify three stores in the nutrient cycle.	
○	A.	Air, soil and biomass
○	B.	Biomass, abiotic and biotic
○	C.	Biomass, litter and soil.
○	D.	Litter, soil and air

12.	Which of the following is not an example of a small-scale ecosystem?	
○	A.	A hedgerow
○	B.	A pond
○	C.	A wood
○	D.	An area of tropical rainforest

13.	What is a biome?	
○	A.	A biome is a very large ecological areas e.g. tropical rainforest.
○	B.	A biome is a small-scale ecosystem e.g. pond.
○	C.	A biome is a store in the nutrient cycle.
○	D.	All of the above

14.	Which of the following is not an example of a biome?	
○	A.	Tropical rainforest
○	B.	Hot Desert
○	C.	Tundra
○	D.	Hedgerow

15.	True or false? *Biomes* contain fauna and flora (animals and plants) that have adapted to the environment.	
○	A.	True
○	B.	False

16.	Look at the map above. Which answer below correctly identifies three biomes?	
○	A.	A = Rainforest, B = Tundra and C = Desert.
○	B.	A = Tundra, B = Rainforest and C = Desert.
○	C.	A = Desert, B = Tundra and C = Rainforest.
○	D.	A = Tundra, B = Desert and C = Rainforest.

17.	Which biome is mainly found between 15° north – 15° south of the Equator?	
○	A.	Hot desert
○	B.	Tundra
○	C.	Tropical rainforest
○	D.	Savanna

18.	Which biome is mainly found between 15-30° north and south of the Equator?	
○	A.	Hot desert
○	B.	Tundra
○	C.	Tropical rainforest
○	D.	Savanna

19.	Which biome is mainly found in the extreme north?	
○	A.	Hot desert
○	B.	Tundra
○	C.	Tropical rainforest
○	D.	Savanna

20.	What is the tropical rainforest?	
○	A.	The tropical rainforest is a forest occurring in tropical areas of heavy rainfall.
○	B.	The tropical rainforest is a forest occurring in tropical areas of low rainfall.
○	C.	The tropical rainforest is a forest occurring along the tropics of Cancer and Capricorn occurring in areas of high rainfall.
○	D.	The tropical rainforest is a forest occurring along the tropics of Cancer and Capricorn occurring in areas of low rainfall.

21.	What % of all life forms on our planet are found in tropical rainforests?	
○	A.	Less than a 25%
○	B.	Between 25% and 50%
○	C.	More than 50%

22.	True or false? Rainforests are the most productive and most complex ecosystems on Earth.	
○	A.	True
○	B.	False

23.	Which of the following best describes climate in the rainforest?	
○	A.	Temperature = 8°C Rainfall = 1000mm
○	B.	Temperature = 18°C Rainfall = 1500mm
○	C.	Temperature = 28°C Rainfall = 2000mm
○	D.	Temperature = 38°C Rainfall = 3000mm

24.	Where is the greatest area of tropical rainforest found?	
○	A.	Indonesia
○	B.	Democratic Republic of Congo
○	C.	Peru
○	D.	Brazil

25.	Identify the rainforest's main layers.	
○	A.	Plant layer, under canopy, canopy and emergent.
○	B.	Shrub layer, under shrub layer, canopy and emergent.
○	C.	Shrub layer, under canopy, canopy and emergent.
○	D.	Ground layer, under canopy, crown layer and emergent.

26.	True or false? Emergents are the tallest trees and are usually under 30 metres tall	
○	A.	True
○	B.	False

27.	True or false? The canopy contains over 50% of the rainforest wildlife.	
○	A.	True
○	B.	False

28.	Which type of plant climbs trees to reach sunlight in the canopy?	
○	A.	Epiphytes
○	B.	Lianas
○	C.	Air plants
○	D.	Sun plants

29.	Name an organism that grows on the surface of a plant and gets its moisture and nutrients from the air, rain, water or from debris gathering around it.	
○	A.	Epiphytes
○	B.	Lianas
○	C.	Rain plants
○	D.	Sun plants

30.	Why do tree trunks in the under canopy have thin or no bark?	
○	A.	To allow animals to climb them.
○	B.	No need to protect them from the cold or prevent water loss
○	C.	To make them easier to cut down
○	D.	To discourage humans from climbing the tree.

31.	Which rainforest layer is being described below? It contains shrubs and ferns and other plants needing less light. Saplings of emergents and canopy trees can also be found here.	
○	A.	Shrub layer
○	B.	Under canopy
○	C.	Canopy
○	D.	Emergent

32.	What is the layer of rotting leaves and dead animals on the forest floor called?	
○	A.	Rubbish
○	B.	Litter
○	C.	Decaying
○	D.	Rotting

33.	True or false? Below the rich top soil, the soil lacks nutrients. This is because nutrients are rapidly absorbed by vegetation.	
○	A.	True
○	B.	False

34.	Which of the following is not a way vegetation has adapted to the rainforest environment?	
○	A.	Buttress roots
○	B.	Waxy leaves
○	C.	Rough bark
○	D.	Drip tips

35.	Why have plants developed a waxy surface and drip tips?	
○	A.	The weight of water doesn't damage the plant, and so there's standing water for fungi and bacteria to grow in.
○	B.	The weight of water damages the plant, and there's standing water for fungi and bacteria to grow in.
○	C.	The weight of water doesn't damage the plant, and there's no standing water for fungi and bacteria to grow in.
○	D.	To reduce the risk of flooding in the tropical rainforest.

36.	Why are some leaf stems flexible?	
○	A.	To allow leaves to move with the sun to maximise photosynthesis.
○	B.	To enable plants to disrupt the movement of termites.
○	C.	To allow leaves to avoid heavy rainfall.
○	D.	To capture more rainfall.

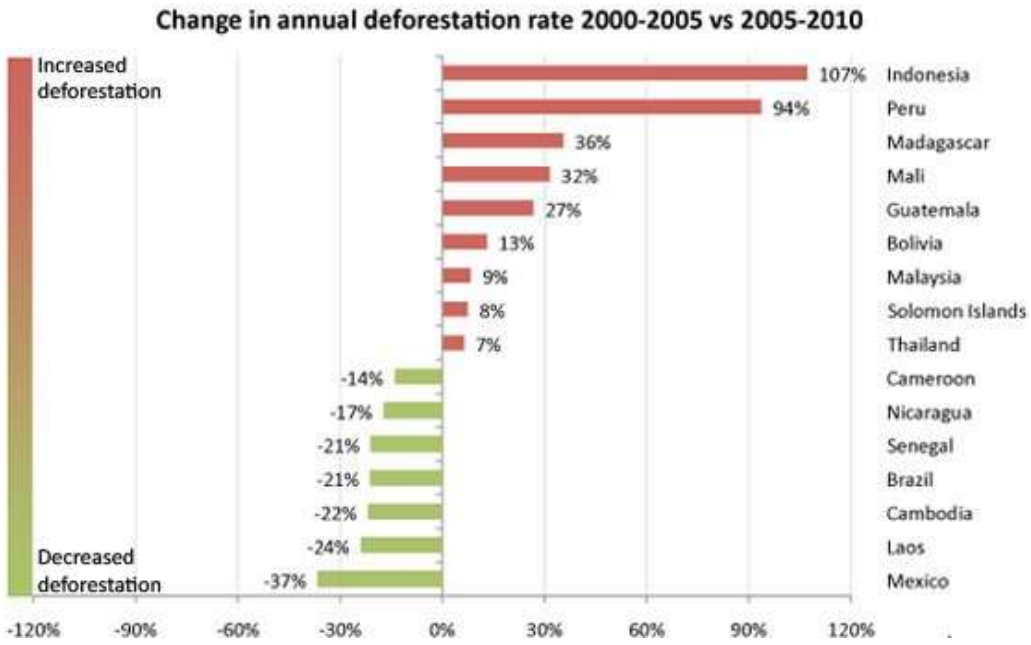
37.	What adaptation has the poison dart frog made to survive in the tropical rainforest?	
○	A.	Green colour to camouflage
○	B.	Claws to grip to the waxy surface of leaves.
○	C.	Bright colours to warn predators.

38.	Why do sloths have long, sharp claws?	
○	A.	To cling onto branches
○	B.	To extract prey from tree bark
○	C.	To itch themselves due to the large number of termites that bury into their fur.
○	D.	To pick their noses.

39.	The spider monkey has developed a prehensile tail. What does this mean?	
○	A.	A tail that looks like vegetation to help hide from predators.
○	B.	A tail that is a different colour to the rest of the body.
○	C.	A tail used to attract mates.
○	D.	A tail able to grasp or hold objects

40.	Why have geckos developed large, flattened toe pads that have sticky scales on their undersides?	
○	A.	To hold onto prey.
○	B.	To help them grip onto the smooth tree trunks.
○	C.	To help them swim.
○	D.	To easily detach if they are caught by a predator.

Figure 1 Changes in annual deforestation rate 2000-2005 vs 2005-2010



41.	Look at figure 1. Where is the rate of deforestation increasing?	
○	A.	Mexico, Laos and Cambodia
○	B.	Indonesia, Peru and Brazil
○	C.	Indonesia, Peru and Madagascar
○	D.	Thailand, Nicaragua and Senegal

42.	Look at figure 1. Where is the rate of deforestation decreasing?	
○	A.	Mexico, Laos and Cambodia
○	B.	Indonesia, Peru and Brazil
○	C.	Indonesia, Peru and Madagascar
○	D.	Thailand, Nicaragua and Senegal

43.	Which of the following is not a cause of deforestation in the tropical rainforest?	
○	A.	Cattle ranching
○	B.	Afforestation
○	C.	Farming
○	D.	Road Building

44.	Which of the following conditions make the Malaysian rainforest ideal for HEP?	
○	A.	The large number of lakes.
○	B.	The mountainous environment.
○	C.	Unlimited supply of water and ideal river conditions
○	D.	There are few indigenous people living there.

45.	Which of the following is not a type of agriculture affecting tropical rainforests?	
○	A.	Cattle ranching
○	B.	Palm oil production
○	C.	Soya production
○	D.	Hydroponics

46.	True or false? Deforestation leads to soil erosion.	
○	A.	True
○	B.	False

47.	True or false? Deforestation provides a valuable income in many LICs and NEEs.	
○	A.	True
○	B.	False

48.	Which of the following is <u>NOT</u> an example of a local impact of deforestation in the tropical rainforest?	
○	A.	Elimination of indigenous groups and their way of life.
○	B.	Soil erosion
○	C.	An increase in CO2 levels in the atmosphere.
○	D.	Destruction of the nutrient cycle.

49.	Which 2 of the following are global impacts of rainforest deforestation?	
○	A.	Less medicinal plants
○	B.	Local climate change
○	C.	Loss of biodiversity
○	D.	Mining provides jobs

50.	What does it mean to sustainably manage the tropical rainforest?	
○	A.	To use the rainforest in a way that enables local people to benefit from the rainforest today, but ensures the resource is available to future generations.
○	B.	To use the rainforest in a way that enables local people to benefit from the rainforest today but will not be available to future generations.
○	C.	To use the rainforest in a way that local people will not benefit from today, but ensures the resource is available to future generations.

51.	Which 2 of the following are examples of sustainable management of the rainforest at the local level?	
○	A.	Replanting
○	B.	Selective logging
○	C.	Building dams
○	D.	Selling more wood

52.	Which 2 of the following are examples of sustainable management of the rainforest at the international level?	
○	A.	Inter-government agreements on hardwoods and endangered species.
○	B.	Debt reduction by HICs
○	C.	Replanting
○	D.	Creating protected areas or reserves.

53.	Which local strategy for managing the tropical rainforest sustainably is described below? Felling trees only when they are fully grown, and letting younger trees mature and continue protecting the ground from erosion.	
○	A.	Replanting
○	B.	Selective logging
○	C.	Agroforestry
○	D.	Stopping illegal logging

54.	Which national strategy for managing the tropical rainforest sustainably is described below? Stopping deforestation and development in designated areas of rainforest. This often occurs in areas settled by indigenous people.	
○	A.	Creating protected areas or reserves.
○	B.	Education
○	C.	Stopping the abuse of the rainforest by developers.

55.	Which national strategy for managing the tropical rainforest sustainably is described below? Making subjects such as environmental studies a compulsory part of the school curriculum.	
○	A.	Creating protected areas or reserves.
○	B.	Education
○	C.	Stopping the abuse of the rainforest by developers.

56.	Which international strategy for managing the tropical rainforest sustainably is described below? An agreement to convert debt to a high-income country into a fund to protect large areas of tropical rainforest.	
○	A.	Inter-government agreements on hardwoods and endangered species
○	B.	Conservation and education by NGOs
○	C.	Debt reduction by HICs

57.	Which international strategy for managing the tropical rainforest sustainably is described below? Agreements between governments aimed at protecting the biodiversity and resources of the rainforest.	
○	A.	Inter-government agreements on hardwoods and endangered species
○	B.	Conservation and education by NGOs
○	C.	Debt reduction by HICs

58.	What is the 2006 International Tropical Timber Agreement an example of?	
○	A.	Inter-government agreements on hardwoods and endangered species
○	B.	Conservation and education by NGOs
○	C.	Debt reduction by HICs

59.	Which international approach involves: • promoting the conservation message largely through education programmes in schools and colleges • providing training for conservation workers • providing practical help to make programmes more sustainable • buying up threatened areas and create nature reserves.	
○	A.	Inter-government agreements on hardwoods and endangered species
○	B.	Conservation and education by NGOs
○	C.	Debt reduction by HICs

60.	Which of the following is not a challenge that needs to be overcome to achieve a sustainable balance between protection and development in the tropical rainforest?	
○	A.	Some governments are not willing to do anything that risks slowing down the rate of economic development.
○	B.	Some governments are unwilling to enforce monitoring laws aimed at protecting the rainforest.
○	C.	There is a lot of corruption in the way forests are treated, such as bribes to allow illegal logging.
○	D.	Making subjects, such as ecology or environmental studies, a compulsory part of the school curriculum.

Hot Deserts

61.	Where are hot deserts located?	
○	A.	Between 20° and 30° north and south of the equator.
○	B.	Between 20° north and south of the equator.
○	C.	Between 5° north and south of the equator.
○	D.	Between 5° and 10° north and south of the equator.

62.	Which of the following characterises the climate in the world's hot desert regions?	
○	A.	Hot and dry rising air with less than 250 millimetres of rain annually.
○	B.	Hot and dry sinking air less than 250 millimetres of rain annually.
○	C.	Hot and wet rising air less than 250 millimetres of rain annually.
○	D.	Hot and wet sinking air less than 250 millimetres of rain annually.

63.	Which of the following is not an example of hot desert?	
○	A.	Australian
○	B.	Thar
○	C.	Sahara
○	D.	Antarctica

64.	What are areas of land found on the borders of hots deserts known as?	
○	A.	Semi-arid
○	B.	Semi-horrid
○	C.	Semi-fringe
○	D.	Semi-detached

65.	What is the diurnal temperature range?	
○	A.	The range in temperatures from hottest to coldest in the year
○	B.	The amount of rain in the desert
○	C.	The change in temperature between the day and night
○	D.	The temperature where living things die in the desert

66.	True or false? Some desert soils are potentially very fertile because important nutrients for plant growth, such as calcium, have not been leached away over time.	
○	A.	True
○	B.	False

67.	What is the collective name given to plants that can survive in very dry conditions?	
○	A.	Cacti
○	B.	Epiphytes
○	C.	Xerofites
○	D.	Xerophytes

68.	Which of the following are adaptations made by vegetation to survive the desert environment? (You may choose more than one)	
○	A.	They have white upper surfaces to reflect the heat
○	B.	Some plants have thick, waxy cuticles to reduce water loss through transpiration.
○	C.	Deserts bloom suddenly after rainfall so to complete their life cycle quickly.
○	D.	Plants have drip tips so water does not accumulate on leaves.

69.	How have cacti adapted to survive in the desert climate? (You can choose more than one answer).	
○	A.	They are succulents, storing water in their tissues.
○	B.	Spikes deter consumers.
○	C.	Their small, waxy leaves reduce transpiration loss.
○	D.	They have short life cycles

70.	How is the Desert Sand Verbena able to survive in the desert ecosystem?	
○	A.	It's seeds stay dormant in the soil until the rain comes and has a short life cyce
○	B.	It chemically breaks down organic material using organic acids.
○	C.	It decomposes organic material.
○	D.	It absorbs water from the atmosphere.

71.	What are the desert soils like?	
○	A.	Deep and rich in nutrients
○	B.	Dry and full of organic matter
○	C.	Dry, sandy/stony and salty
○	D.	Salty, moist and fertile

72.	Which of the following food chains would not be found in the desert ecosystem?	
○	A.	Grass → Kangaroo rat → Coyote
○	B.	Cactus → Grasshopper → Roadrunner → Coyote
○	C.	Cactus → Grasshopper → Scorpion → Road runner → Coyote
○	D.	Cactus → Grasshopper → Spider Monkey → Coyote

73.	Which of the following is not an animal adaptation to the desert ecosystem?	
○	A.	Fennec Foxes have thick fur on the soles of their feet, protecting them from the hot ground.
○	B.	Fennec Foxes are nocturnal to avoid the daytime temperatures
○	C.	Camels have very concentrated urine to avoid water loss
○	D.	Camels store water in their humps for long journeys

74.	Which of the following are hot desert development opportunities? (You may choose more than one)	
○	A.	Agriculture, providing water can be found for irrigation through aquifers or canals.
○	B.	Mineral extraction such as copper, uranium, lead, zinc and coal.
○	C.	Energy, such as solar.
○	D.	Tourism

75.	Which of the following is <u>NOT</u> a reason for uneven development in the desert ecosystem?	
○	A.	It is difficult to adapt to the hot desert environment.
○	B.	Desert environments are very inaccessible.
○	C.	There is a low population density in deserts.
○	D.	Large areas of desert are protected from development.

76.	How have people adapted to the desert environment? (You may choose more than one)	
○	A.	Whitewashed buildings help reflect the sun.
○	B.	Water is extracted from aquifers.
○	C.	Slash and burn is a practiced form of farming.
○	D.	Irrigation is used to enable farming.

77.	What is desertification?	
○	A.	The process of land transforming from desert to fertile land.
○	B.	The process of rock breaking down in situ.
○	C.	The process by which fertile land changes into desert.
○	D.	The process by which land wears away by the action of the sea, sand or river.

78.	Which is the desert fringe also known as?	
○	A.	Semi-deserts
○	B.	Semi-arid area
○	C.	Drylands
○	D.	All of the above

79.	True or false? At the borders of hot deserts, desert fringe areas support greater biodiversity and larger plants.	
○	A.	True
○	B.	False

80.	True or false? Despite their higher rainfall, desert fringes are classified, alongside hot deserts, as fragile environments.	
○	A.	True
○	B.	False

81.	Which of the following is not a cause of desertification	
○	A.	Mining for minerals
○	B.	Overgrazing by cattle
○	C.	Deforestation for fuel and constructing shelter
○	D.	Cyclical drought bringing lower and less reliable rainfall

82.	Which of the following statements is not a human cause of desertification?	
○	A.	Population growth
○	B.	Overgrazing by cattle
○	C.	Deforestation for fuel and constructing shelter
○	D.	Cyclical drought bringing lower and less reliable rainfall

83.	True or false? Bunds are a low-tech solution to reducing soil erosion and desertification.	
○	A.	True
○	B.	False

84	Which of the following are techniques that can be used to tackle desertification?	
○	A.	Tree-planting schemes to bind and protect the soil.
○	B.	Planting grass on slopes to help stabilise the topsoil and building small rock dams to trap rainwater in gullies.
○	C.	Building terraces (flattened sections with a retaining wall) on farmed slopes.
○	D.	All of the above

85.	Which of the following is an attempt to tackle desertification in the Sahel, Africa?	
○	A.	Green Door
○	B.	Green Wall
○	C.	Green Wing
○	D.	Green Goblin

86.	How does the Green Wall prevent desertification? (You may choose more than one)	
○	A.	The roots of the Acacia trees hold the soil together preventing erosion
○	B.	The trees form a physical wall to hold back the sand
○	C.	The trees provide shade for the ground to prevent it drying out
○	D.	It gives people more wood to cut down

87.	Technology that is suited to the needs, skills, knowledge and wealth of local people in the environment where they live which incorporates simple ideas with cheap and available materials is known as what?	
○	A.	Appropriate technology
○	B.	Intermediate technology
○	C.	Both of the above

88.	True or false? Solar Stoves are an example of appropriate technology.	
○	A.	True
○	B.	False