



Ministry of Education, Youth and Information
Primary Exit Profile (PEP 6)

April 2019

Curriculum Based Test-Science

Time: 1 hour 30 minutes

Write your name and school below:

Name of Student

Name of School

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For items 1 - 32 there is only one (1) correct answer. Indicate your response by shading the letter next to the answer you choose. An example is given below.

Example

Which can be classified as a living thing?

- ☒ (A) stone
- ☐ (B) car
- ☐ (C) tree
- ☐ (D) chair

"C" is shaded because it is the only correct answer.

1. Which statement completes the definition for the term environment?

The environment consists of _____.

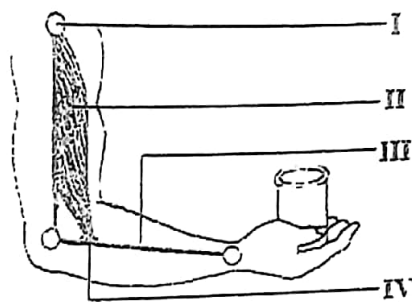
- ☐ (A) only the living things placed there by humans
- ☐ (B) only the non-living things placed there by humans
- ☐ (C) all the living and non-living things that occur naturally
- ☐ (D) the soil in which plants grow and animals live

2. Which statement completes the definition for overgrazing?

Overgrazing refers to _____.

- ☐ (A) having too many animals on a small piece of land
- ☐ (B) catching too many animals in an area until very few animals are left
- ☐ (C) the hunting of animals to the point that no animals are left
- ☐ (D) the heavy feeding of animals on vegetation until very little vegetation is left

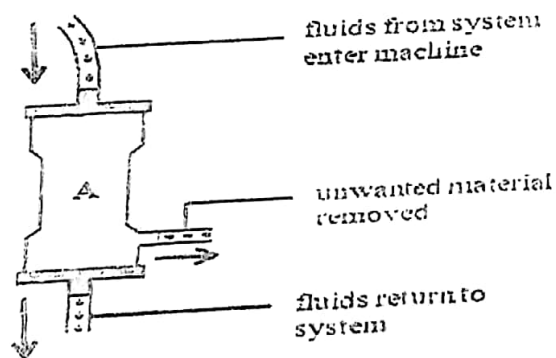
The diagram shows the arm of a human. Use it to answer item 3.



3. If the cup held in the person's hand increased in weight, which structure would most likely be affected?

- (A) I
- (B) II
- (C) III
- (D) IV

The diagram below shows how machine "A" works. Use the information to answer item 4.



4. Which organ has a function that is similar to machine "A"?

- (A) kidney
- (B) mouth
- (C) lungs
- (D) anus

5. Which is **NOT** a suitable recommendation to prevent soil erosion?

- ☐ A cut flat areas resembling steps into the hillside
- ☐ B maintain a thick cover of vegetation on the land
- ☐ C allow animals to graze on the land
- ☐ D improve how water drains off the soil

6. Which statement completes the definition for soil erosion?
Soil erosion is the removal of _____.

- ☐ A the upper layer of the soil
- ☐ B tree roots from the soil
- ☐ C nutrients from the soil
- ☐ D the layer of decaying matter on the soil

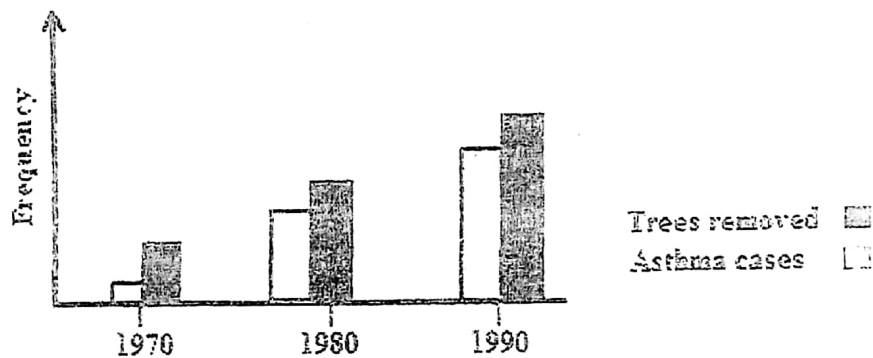
7. In which situation would energy be passed from one component of the ecosystem to another?

- ☐ A An elephant sleeping
- ☐ B A dog chasing a cat
- ☐ C A bird flying at high speeds
- ☐ D A bee sucking nectar from a flower

Examine the paragraph and bar graph below. Use the information to answer item 8.

A healthy ecosystem is very important as it provides humans with many services. For example, trees provide us with food, medicine; they purify the air (for example by trapping dust) and remove carbon dioxide. Animals and plants provide pest control and recreation. Finally, the ecosystem directly or indirectly supports our survival and quality of life.

Bar graph Showing the Number of Asthma Cases and Trees Removed over a 20 Year Period.



8. Which of the following could be a possible cause for the trend observed in the bar graph? By removing trees, ____.
- (A) oxygen in the air increases and this leads to the increase in asthma cases
 - (B) impurities in the air increases and this leads to an increase in asthma cases
 - (C) air flow is prevented, and this leads to an increase in asthma cases
 - (D) carbon dioxide in the air decreases, and this leads to the increase in asthma cases
9. Which of the following is **NOT** a cause of soil degradation?
- (A) deforestation
 - (B) lack of crop rotation
 - (C) slash and burn
 - (D) terracing

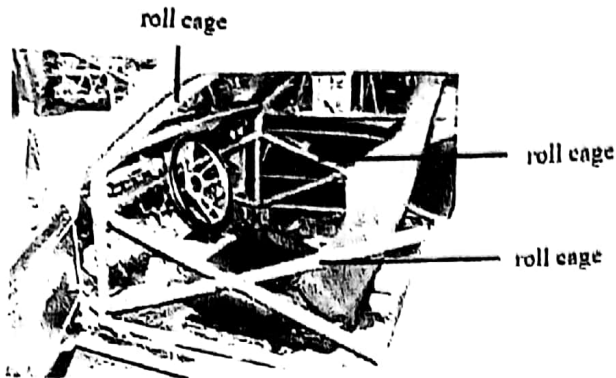
The picture shows a human activity. Use the picture to answer item 10.



10. Which is the **most likely** effect of this activity on the environment?
The activity could ____.
- (A) result in the death of crops on nearby farm lands
 - (B) create a breeding site for animals that spread diseases
 - (C) result in the loss of trees and other types of vegetation
 - (D) increase the number of landslides in the area

Read the statement and examine the picture in the box. Use the information to answer item 11.

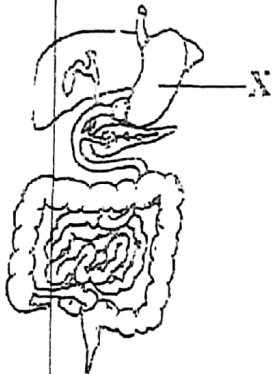
Many race cars have a metal cage called a "roll cage" installed on the inside of the car. The roll cage protects the driver if the race car turns over.



11. Which human body system has a function similar to the roll cage found in race cars?

- (A) digestive system
- (B) muscular system
- (C) skeletal system
- (D) respiratory system

The diagram below shows the digestive system. Use it to answer item 12.



12. Which organ is labelled X ?

- (A) anus
- (B) large intestine
- (C) oesophagus
- (D) stomach

Use the information in the box and the diagram of the skeleton of the human hand to answer item 13.

The human thumb is very special as it is the only finger that can be moved around to touch the other fingers of the hand. The thumb, along with the location of the joints in the other fingers, gives humans and other animals the ability to grasp things.

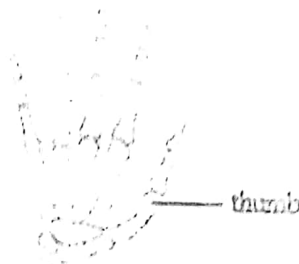


Diagram Showing the Skeleton of the Human Hand

13. Which below would **most likely** be used for holding onto tree limbs and grasping food?



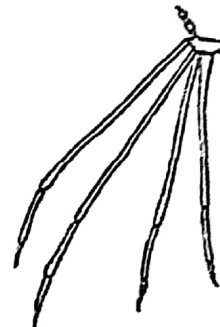
A



B



C



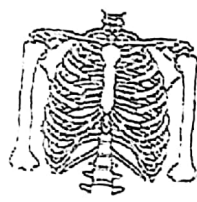
D

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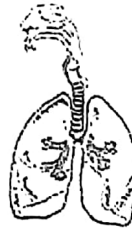
14. Which organ system contains the lungs?

- (A) skeletal system
- (B) respiratory system
- (C) digestive system
- (D) circulatory system

The diagrams below show the different body systems. Use the information to answer item 15.



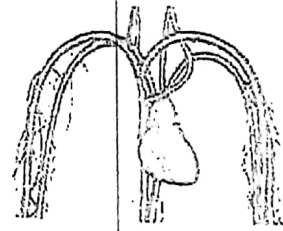
I



II



III



IV

15. Which system represents the circulatory system?

- (A) I
- (B) II
- (C) III
- (D) IV

16. Which organ is **CORRECTLY** paired with its excretory product?

- (A) stomach and carbon dioxide
- (B) kidney and urea
- (C) lungs and excess salt
- (D) skin and water vapour

17.

Which mixture could be classified as a solid – solid mixture?

- ☐ A lemonade
- ☐ B alcohol and vinegar
- ☐ C dust and air
- ☐ D sugar and black pepper

18.

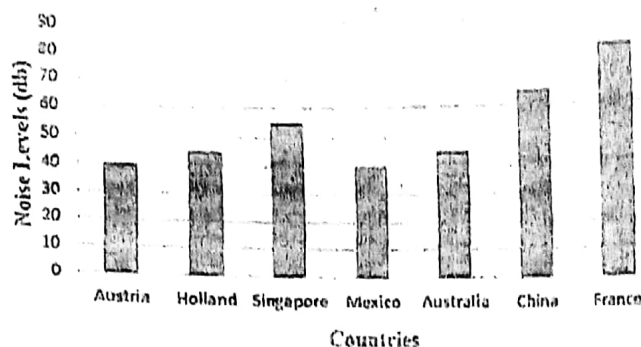
The continuous honking of car horns, along with the sounds coming from the mufflers of car and bike, is **BEST** classified as _____.

- ☐ A high pitched sounds
- ☐ B air pollution
- ☐ C noise pollution
- ☐ D warning noise

10

The bar graph below shows the noise levels in seven countries. Use the information to answer items 19 and 20.

Graph Showing Noise Levels in seven Countries



19. How much **GREATER** is the noise level in France than Singapore?
- (A) 20 db
 - (B) 25 db
 - (C) 40 db
 - (D) 65 db
20. Which of these four countries: Holland, Singapore, Mexico or China has the **LOWEST** noise levels?
- (A) Holland
 - (B) Singapore
 - (C) Mexico
 - (D) China
21. A diamond sparkling in a brightly lit room could be classified as what type of object?
- (A) luminous
 - (B) non-luminous
 - (C) opaque
 - (D) translucent

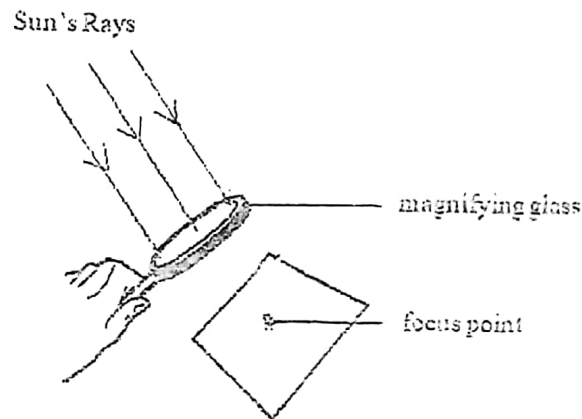
22.

Which of the following is a hypothesis?

- (A) The thickness of transparent glass affects how much light passes through.
- (B) Light may pass through a transparent sheet of glass.
- (C) A transparent sheet of glass has some effect on light.
- (D) Light will travel slowly through glass.

Use the statement in the box and diagram below to answer item 23.

When the sun's rays pass through a magnifying glass the rays become focused on a single spot.



23.

Which property of light is demonstrated by this activity?
Light can _____.

- (A) travel in a straight line
- (B) be refracted
- (C) be magnified
- (D) be reflected

Use the information in the table below to answer item 24.

Table Showing the Area of the Light on a Wall and the Distance the Flashlight was Held from the Wall

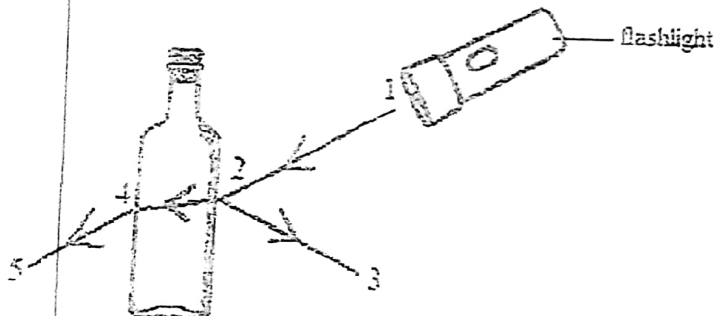
Distance of Flashlight from Wall (cm)	Area of Light on wall (cm ²)
3	6
4	8
8	16
12	24

24.

Which is **NOT** a pattern seen in the data presented in the table?

- (A) As the distance of the flashlight from the wall increases the area of the light increases.
- (B) As the distance of the flashlight from the wall decreases the area of the light decreases.
- (C) The area of the light on the wall is twice the distance of the flashlight from the wall.
- (D) As the distance of the flashlight from the wall increases the area of the light decreases.

The diagram shows the results of an investigation into how light interacts with a transparent bottle. Use the information to answer item 25.



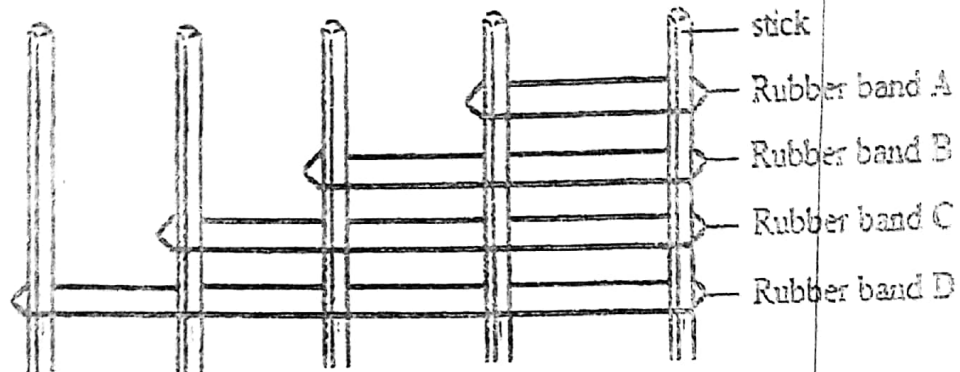
25.

Which statement is **INCORRECT**?

- (A) pathway 1, 2, 3 shows refraction
- (B) pathway 1, 2, 3 shows reflection
- (C) pathway 1, 2, 4 shows refraction
- (D) the bottle allows light to pass through

The setup of an investigation involving four identical rubber bands is shown below.

A student plucked each rubber band with equal force and observed that rubber band D produced the sound with the highest pitch.



26. What conclusion can be made about Rubber band D?
Rubber band D _____.

- (A) vibrated the slowest
- (B) weighs the most
- (C) vibrated the fastest
- (D) was the longest

14
14

Use the information below to answer items 27 and 28.

The table below shows the results of an investigation in which a student dropped 5 metal discs of different diameters and recorded the pitch of the sound made when they hit the floor.

Diameter of Metal Disc (cm)	Falling Height (cm)	Pitch		
		High	Medium	Low
3	30			✓
10	30		✓	
5	30			✓
18	30	✓		
14	30		✓	

27. The student predicted that a metal disc with a diameter of 4 cm would produce a sound with a low pitch. Which statement **BEST** supports this prediction?
- (A) Diameters of 5 cm produce a sound with a low pitch.
 - (B) Diameters 3 cm to 5 cm produce a sound with a low pitch.
 - (C) Diameters below 18 cm produce sounds of different pitch.
 - (D) Diameters below 18 cm produce sounds with a high pitch.
28. Which diameter would **LIKELY** allow a metal disc to produce a sound with a medium pitch when it hits the floor?
- (A) 5 cm
 - (B) 9 cm
 - (C) 13 cm
 - (D) 19 cm

Examine the table below and use the information to answer item 29.

A student poured each of three liquids: Liquid A, Liquid B, and Liquid C, through a filter paper and made the following observations.

Liquid	Observation
Liquid A	Material was seen on the filter paper after all the liquid was poured through the filter paper.
Liquid B	The liquid changed from deep red to light red when it was poured through the filter paper.
Liquid C	No change in the appearance of the liquid after it was poured through the filter paper.
Liquid D	The cloudiness of the liquid was reduced after it was poured through the filter paper.

29. Which liquid is **least likely** to be a mixture?

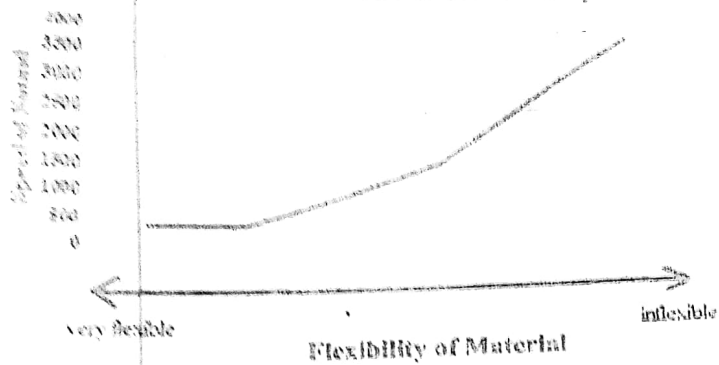
- (A) Liquid A
- (B) Liquid B
- (C) Liquid C
- (D) Liquid D

30. Which is **NOT** a mixture?

- (A) water
- (B) soda
- (C) cup of tea
- (D) pepper sauce

Examine the graph below and use the information to answer item 31.

Graph Showing how the Flexibility of Materials Affects the Speed at which Sounds Travels Through them.



31. Which material would sound travel **SLOWEST** through?

- (A) wood
- (B) glass
- (C) concrete
- (D) cardboard

The diagram below shows light rays hitting a surface. Use the diagram to answer item 32.



32. Which property of light is shown in the diagram?

- (A) absorption
- (B) refraction
- (C) reflection

For items 33 – 35 there is more than one (1) correct answer. Indicate your responses by shading the letters next to the answers you choose. An example is given below.

Example

Which two (2) of the following are characteristics of living things?

- ☒ (A) grow
- ☐ (B) run
- ☒ (C) reproduce
- ☐ (D) talk

"A" and "C" are shaded because they are the only two correct answers.

33. Which two (2) are NOT sources of noise pollution?
The sound coming from _____.

- ☐ (A) a jack hammer
- ☐ (B) a pen when it hits the floor
- ☐ (C) the engine of an aircraft
- ☐ (D) paper when it is crushed
- ☐ (E) the siren of an ambulance

Read the statement below and use the information to answer item 34.

Paula turns in Kim's direction and shouts directly at her. Even though Paula was not facing the other children in the classroom when she shouted they all heard.

34. Which two (2) properties of sound most likely allowed all the children to hear Paula's shout?

- ☐ (A) Sound travels in all directions from its source.
- ☐ (B) Sound travels in a straight line.
- ☐ (C) Sound can be absorbed.
- ☐ (D) Sound can be reflected.

Read the statement below and then use the information to answer item 35.

A student wanted to carry out a fair test to determine if the length of a nail would affect the pitch of the sound it made when it fell to the ground. The student collected four nails and allowed each of them to fall to the ground. The pitch of the sound that each nail made was recorded.

35.

Which two (2) steps should be included in the investigation to ensure that it is a fair test? Ensure that the nails are _____.

- (A) all the same length
- (B) of different lengths
- (C) all dropped from the same height
- (D) dropped from different heights
- (E) dropped on different surfaces

For items 36 – 38 indicate your response by shading the appropriate letter in each row of the table given. Only one letter is to be shaded in each row. An example is given below.

Example

Examine each function in the table below, then indicate the sense organ it matches by shading the letter under the appropriate column.

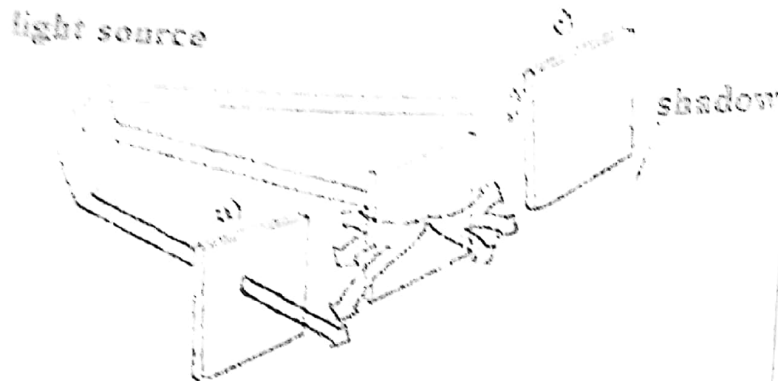
Function	Eye	Nose	Ear
Hearing & Balance	(A)	(B)	(C)
Sight	(A)	(B)	(C)
Smell	(A)	(B)	(C)

The ear is responsible for hearing and balance so "C" is shaded.

The eye is responsible for sight so "A" is shaded.

The nose is responsible for smell so "B" is shaded.

The diagram below shows the result of an investigation in which a beam of light was shone through three materials of different characteristics. Use the information to answer item 36.



Source: First Steps in Science Book 6

36. The statements below are conclusions a student made based on the results. Indicate by shading under the column whether the conclusions made are **supported** or **not supported** by the results of the investigation.

Conclusion	Supported	Not Supported
Object A is translucent	<input checked="" type="radio"/>	<input type="radio"/>
Object C is opaque	<input checked="" type="radio"/>	<input type="radio"/>

The table below shows for four different locations: the average rainfall, along with the combined mass of freshly fallen leaves and rotting leaves. The table also shows for each location the mass of rotting leaves alone. Use the information to answer item 37.

Location	Annual Rainfall (mm)	Freshly fallen Leaves + Rotting leaves (kg)	Rotting leaves (kg)
1	123	500	5
2	226	800	200
3	286	300	150
4	362	200	150

37. Read each statement in the table below. Indicate by shading the appropriate circle whether you agree or disagree with the statements.

Statements	Agree	Disagree
If the average rainfall for location four is 400 mm the percentage mass of rotting leaves will increase.	<input type="radio"/> A	<input type="radio"/> B
If location three experiences a severe drought the percentage of rotting leaves would most likely increase.	<input type="radio"/> A	<input type="radio"/> B

38. Each statement in the table below was suggested as possible causes of climate change. For each statement, indicate by shading whether you agree or disagree.

Causes	Agree	Disagree
Burning of garbage	<input type="radio"/> A	<input type="radio"/> B
Overfishing	<input type="radio"/> A	<input type="radio"/> B
The use of gasoline/petrol in cars	<input type="radio"/> A	<input type="radio"/> B
The large scale removal of trees	<input type="radio"/> A	<input type="radio"/> B

For items 39 – 40 indicate your responses by shading the letter in the sentence or paragraph that makes it correct. Each letter corresponds to a word/expression from a given list of options. Each option should be used only once. Not all options have to be used. An example is given below.

Example

Use the list of options given below to complete the sentences that follow. Indicate your responses by shading the appropriate circle that makes the paragraph true.

(A) five

(B) six

(C) sight

(D) eye

The (A) (B) (C) (D) is one of the (A) (B) (C) (D) sense organs in the body. It is responsible for (A) (B) (C) (D).

The first missing word in the paragraph is "eye" so "D" is shaded.

The second missing word in the paragraph is "five" so "A" is shaded.

The third missing word in the paragraph is "sight" so "C" is shaded.

From the choices given, shade one letter in each space so that the resulting sentences are correct.

Choices: A. solid-solid B. solid-liquid C. liquid-liquid

39. A mixture of cornmeal and sugar can be classified as a (A) (B) (C) mixture. This type of mixture is different from a mixture of syrup and water which can be classified as a (A) (B) (C) mixture. In a mixture of syrup and water the syrup will completely dissolve in water.

The choices below describe effects of human activities or climate change. From the choices given, shade one letter in each space so that the resulting paragraph is correct.

Choices:

- A rising sea levels and the resulting loss of beaches
- B increased flooding in low lying communities
- C rising carbon dioxide levels and a resulting temperature change
- D death or illness in animals that depend on the river

40. Often times fertilizers used on farms can get washed into nearby rivers. This can have a severe effect on the environment as it can result in (A) (B) (C) (D). The environment can also be harmed when communities and roads are built on hillsides, as this may cause (A) (B) (C) (D). As global temperatures continue to increase, (A) (B) (C) (D) can be observed in many locations around the world.