



INDIAN SCHOOL AL WADI AL KABIR

MIDTERM (2023 - 24)

Class: VIII
Date: 26.09.2023

Sub: SCIENCE
Set - II

Max Marks: 80
Time: 2 ½ hours

General Instructions:

- i. All questions are compulsory. Marks are indicated against each section.
- ii. The question paper comprises **9** pages and **39** questions in 5 sections A, B, C, D and E.
- iii. Q.1 to Q.16 in **section A** -MCQ carry ONE mark each. Write the correct answer along with the option only in the answer script.
- iv. Q.17 to Q.20 in **section A** -Assertion and Reason carry ONE mark each.
- v. Q. 21 to Q.26 in **section B** are short Answer Type Questions and carry TWO marks each.
- vi. Q.27 TO Q.33 in **section C** are Short Answer Type Questions and carry THREE marks each.
- vii. Q.34 TO Q.36 in **section D** are Long Answer Type Questions and carry FIVE marks each.
- viii. Q.37 TO Q.39 in **section E** Case study/paragraph Questions carry FOUR marks each.
- ix. Write the same question number as given in the question paper.
- x. Ink killer or whitener should not be used in the answer script.
- xi. Diagrams should be drawn using a pencil.

SECTION A (1 X 20 = 20)

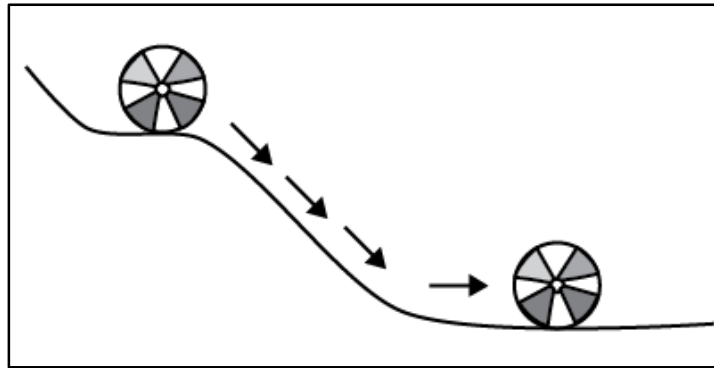
1. A farmer was turning the soil in the field constantly to loosen it. What is the likely reason for this agricultural practice?
 - a) This prevent growth of weeds in the soil
 - b) This increases the amount of soil in the field
 - c) This allows penetration of roots in soil easily
 - d) This allows water to stay in soil for longer duration
2. A farmer after sowing the seeds adds manure to his field. What should be the immediate next agricultural practice after addition of manure and fertilisers?
 - a) Preparation of soil
 - b) Storage of crops
 - c) Irrigation of soil
 - d) Harvesting of crops

3. The uniform of firemen is made up of synthetic fibres and have coating of melamine plastic. What is the likely characteristic that melamine plastic has that makes it ideal to make uniform for firemen?
- a) It is a poor conductor of heat.
 - b) It is a good conductor of heat.
 - c) It absorbs all the heat.
 - d) It reflects all the heat
4. Which term is used for a natural polymer made up of a large number of glucose units?
- a) Protein
 - b) Ester
 - c) Cellulose
 - d) Polyester
5. Government has banned use of plastic carry bags. Shopkeepers and malls are advised to promote the use of reusable paper and cloth bags. What is a likely reason for the ban of plastic?
- a) They burn slowly and release poisonous fumes into the environment.
 - b) They get completely burnt and removed from the environment.
 - c) They get degrade naturally in the soil to release harmful substances.
 - d) They require a large number of bacteria for their degradation.
6. A container filled with water. Which of the following statements is correct about the pressure of water?



- a) Pressure at A = Pressure at B = Pressure at C
- b) Pressure at A > Pressure at B > Pressure at C
- c) Pressure at A > Pressure at B = Pressure at C
- d) Pressure at A = Pressure at B > Pressure at C

7. In a tug of war, three boys of team A pull the rope with forces of 100 N, 120 N and 170N. In team B, the three members pull the rope with forces of 130 N, 150 N and 155 N. Who will win the tug of war? What is the resultant force?
- a) Team A, 45 N
b) Team B, 45 N
c) Team A, 390 N
d) Team B, 435 N
8. To sharpen the blade of a knife by rubbing it against a surface, which of the following will be most suitable?
- a) Glass block
b) Plastic block
c) Wooden block
d) Stone
9. The diagram given below shows a ball down a slope. The ball finally comes to a stop by itself. Which of the following statements describes what most likely caused the ball to stop?



- a) The heat produced as a result of its motion.
b) The energy produced as a result of its motion.
c) The speed produced as a result of its motion.
d) The friction produced as a result of its motion.
10. Most of the machines use ball bearings in order to reduce friction. How is rolling more efficient than sliding?
- a) The mass of the object reduces
b) It provides lubrication between the surfaces
c) Interlocking between the surfaces increases
d) The area of contact between the surfaces is less.

11. When coal burns in air, then:

- a) Carbon dioxide is formed.
- b) Sulphur dioxide is formed.
- c) Carbon monoxide is formed.
- d) Nitrogen dioxide is formed.

12. The table lists petroleum products. Which petroleum product is used as a fuel?

i	Petrol
ii	Diesel
iii	LPG
iv	Lubricating oil
v	Paraffin wax
vi	Bitumen

- a) i, ii, and iv
- b) ii, iv, and v
- c) i, ii, and iii
- d) iii, v, and vi

13. Regions with more trees experience less soil erosion. How does the trees reduce soil erosion?

- a) The trees add dead leaves into the soil which increases the soil quantity.
- b) The trees absorb more sunrays which increases soil density.
- c) The trees store extra food in the soil which increases the soil content.
- d) The roots of the trees hold the top layer of the soil firmly.

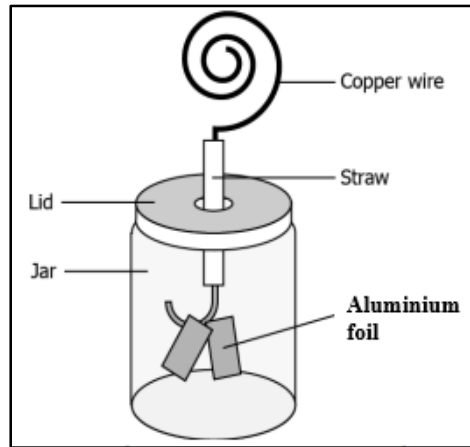
14. A student collects plant waste, animal waste and some old newspaper from the home. Later, the student adds all the material in a container and mixes all the materials. The material was then added to soil as compost to observe the plant growth. What can be concluded from this activity?

- a) Reusing newspaper in compost can eliminate the toxic waste from the environment.
- b) Reusing newspaper can eliminate the risk of herbivores that consume plants.
- c) Reusing newspaper in compost can convert harmful chemicals in soil into useful substances.
- d) Reusing newspaper in compost adds nutrient to the soil and contributes to afforestation.

15. When a glass rod is rubbed with a piece of silk cloth, then:

- a) the glass rod and silk cloth both acquire the positive charge.
- b) the glass rod becomes positively charged while the silk cloth has a negative charge.
- c) the glass rod and silk cloth both acquire the negative charge.
- d) the glass rod becomes negatively charged while the silk cloth has a positive charge.

16. A student performs an activity to detect if an object is charged or not. He made an electroscope as shown in the image.



He brought a charged object near the copper wire to test the working of the device. What changes are likely observed when a charged object is brought closer to the copper wire?

- a) The copper wire unwinds
- b) Colour of the jar changes
- c) The foil sticks to each other
- d) Aluminium foils repel each other

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below -

- i) Both A and R are true and R is the correct explanation of the assertion.*
- ii) Both A and R are true but R is not the correct explanation of the assertion.*
- iii) A is true but R is false.*
- iv) A is false but R is true*

17. **Assertion (A):** When the coin is held in your hand it is at rest. As soon as it is released, it begins to move downwards. It is clear that the state of motion of the coin undergoes a change.

Reason (R): Objects or things fall towards the earth because it pulls them. This force is called the force of gravity, or just gravity.

18. **Assertion (A):** Sunlight and air are inexhaustible resources.

Reason (R): These resources are present in unlimited quantities in nature and are not likely to be exhausted by human activities.

19. **Assertion (A):** Project Tiger was launched by the government of India to save tigers.

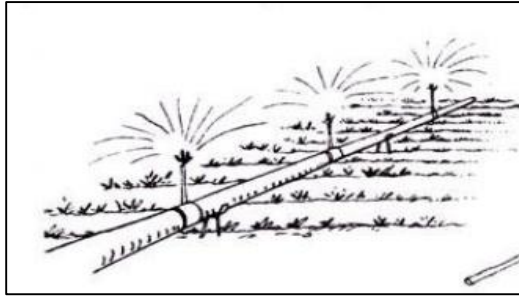
Reason (R): Tiger population is on the verge of extinction.

20. **Assertion (A):** When we touch a charged body, it loses its charge, due to the process of Earthing.

Reason (R): Our body is a good conductor of electricity and so it transfers the charges to the earth.

SECTION B (2 X 6 = 12)

21. Explain the system of irrigation shown in the adjacent picture.



22. Give reasons for the following:

- a) Frying pan handles are made up of thermosetting plastics.
- b) A bucket made of plastic does not rust like a bucket made of iron.

23. A solid body weighs 200 N when placed on a wooden plank, the area of contact is found to be 5m^2 . **Calculate the pressure** exerted by the solid body on the wooden plank.

24. Mention any **two advantages** and **two disadvantages** of friction.

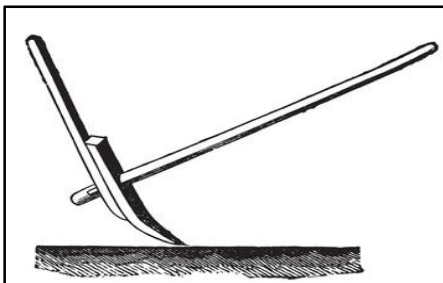
25. How does the formation of petroleum take place?

26. Differentiate between endangered species and extinct species **with examples**.

SECTION C (3 X 7 = 21)

27. a) Mention the difference between Kharif and Rabi crops **with examples**.

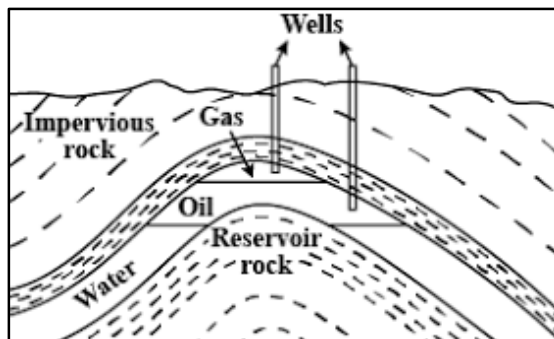
b) **Identify** the agricultural implement and mention its **one use**.



28. a) Why are we advised not to wear synthetic clothes while working in the kitchen?

b) Draw diagrams of **linear** and **cross-linked** arrangement of units in plastics.

29. a) State any **two** differences between balanced and unbalanced force.
 b) Why do some people feel their ears “popping” at the top of the mountain?
30. a) The pressure of a gas contained in a cylinder with a movable piston is 300 Pa. The area of the piston is 50 m² Calculate the **force** exerted on the piston.
 b) What is the **similarity** between electrostatic and magnetic forces?
31. a) Explain why sliding friction is less than static friction.
 b) What is drag? State the factors affecting friction on an object in a fluid?
32. a) Define carbonisation.
 b) Enlist any **two** properties of coal.
 c) Look at the given diagram. Why do we find the oil layer above the water layer?



33. a) What are the aims of the Forest Conservation Act in India?
 b) What is Red Data Book and state its importance?

SECTION D (5 X 3 = 15)

34. a) Why do unhealthy seeds float on water?
 b) What are the weeds? How can we control them?
 c) Why is manure considered to be better than fertilisers?
35. a) Write the **full form** of- PCRA. Mention any **two** tips advised by PCRA to save petrol while driving.
 b) What does CNG stand for and why is it considered to be a better fuel than petrol?
 c) What do you mean by refining of petroleum?
36. a) How does a lightning conductor work?
 b) We hear crackling sounds when we take off woollen sweaters. Why?
 c) **Draw** a neat and **labelled** diagram to show the structure of earth.

SECTION E (4 X 3 = 12)

37. Friction is caused by the irregularities on the two surfaces in contact. Even those surfaces which appear very smooth have a large number of minute irregularities on them. Friction can never be entirely eliminated. No surface is perfectly smooth. Some irregularities are always there. Friction responds to different types of surfaces and different masses of objects. It is obvious that the force of friction will increase if the two surfaces are pressed harder. You can experience it by dragging a mat when nobody is sitting on it, and when a person is sitting on it. Heavier mass will press harder into the irregularities and offers greater resistance to motion that is greater friction. Sometimes we want to reduce friction. For example, we use oil to reduce the friction between the moving parts inside a car engine. In many machines, friction is reduced by using ball bearings. The substances which reduce friction are called lubricants.

- a) Is it possible to reduce friction to zero by polishing surfaces or using lubricants? Explain.
- b) It is easier to drag a mat on the floor when nobody is sitting on it but much more difficult to drag the same mat when a person is sitting on it. Explain why?
- c) What are lubricants? Give **two** examples of lubricants.

38. A great variety of plants and animals exist on earth. They are essential for the well-being and survival of mankind. Today, a major threat to survival of these organisms is deforestation. We know that deforestation means clearing of forests and using that land for other purposes. Trees in the forest are cut for some of the purposes mentioned below:

Procuring land for cultivation, building houses and factories, making furniture or using wood as fuel. Some natural causes of deforestation are forest fires and severe droughts. Cutting trees leads to the accumulation of carbon dioxide in the atmosphere. Carbon dioxide traps heat rays from the sun which are reflected by the earth. This results in an increase in temperature on earth. Deforestation increases the temperature and pollution level on the earth. Ground water level also gets lowered. Deforestation disturbs the balance in nature. If cutting of trees continues, rainfall and the fertility of the soil will decrease. Moreover, there will be increased chances of natural calamities such as floods and droughts. Fewer trees result in more soil erosion. Removal of the top layer of the soil exposes the lower, hard and rocky layers. This soil has less humus and is less fertile. Gradually the fertile land gets converted into deserts. It

is called desertification. The increase in temperature on the earth disturbs the water cycle and may reduce rainfall. This could cause droughts.

- a) What are the causes of deforestation?
- b) How is deforestation associated with global warming?
- c) What is desertification?

39. An earthquake is a sudden shaking or trembling of the earth, which lasts for a very short time. Since earthquakes are caused by the movement of plates, the boundaries of the plates are the weak zones where earthquakes are more likely to occur. The weak zones are also known as seismic or fault zones. Tremors or vibrations caused by the earthquakes which travel in the form of waves within the earth or along the earth's surface, are called seismic waves. Seismograph is an instrument which records these waves. Tremors on the earth can also be caused when a volcano erupts, or a meteor hits the earth, or an underground nuclear explosion is carried out. However, most earthquakes are caused by the movement of earth's plates. In India, the areas most threatened are Kashmir, Western and Central Himalayas, the whole of North-East, Rann of Kutch, Rajasthan and the Indo – Gangetic Plane. Really destructive earthquakes have magnitudes higher than 7 on the Richter scale.

- a) What are seismic waves? How can it be measured?
- b) Write the other causes of tremors on earth.
- c) Mention any **two precautions** that you will take to protect yourself, if earthquake strikes.

ANSWER KEY			
1	2	3	4
c) This allows penetration of roots in soil easily [1]	c) Irrigation of soil [1]	a) It is a poor conductor of heat. [1]	c) Cellulose [1]
5	6	7	8
a) They burn slowly and release poisonous fumes into the environment. [1]	a) Pressure at A = Pressure at B = Pressure at C [1]	b) Team B, 45 N [1]	d) Stone [1]

9	10	11	12
d) The friction produced as a result of its motion. [1]	d) The area of contact between the surfaces is less. [1]	a) Carbon dioxide is formed. [1]	c) i, ii, and iii [1]
13	14	15	16
d) The roots of the trees hold the top layer of the soil firmly. [1]	d) Reusing newspaper in compost adds nutrient to the soil and contributes to afforestation. [1]	b) the glass rod becomes positively charged while the silk cloth has a negative charge. [1]	d) Aluminium foils repel each other [1]
17. i) Both A and R are true and R is the correct explanation of the assertion. [1]			
18. i) Both A and R are true and R is the correct explanation of the assertion. [1]			
19. i) Both A and R are true and R is the correct explanation of the assertion. [1]			
20. i) Both A and R are true and R is the correct explanation of assertion. [1]			
21. The perpendicular pipes, having rotating nozzles on top, are joined to the main pipeline at regular intervals. When water is allowed to flow through the main pipe under pressure with the help of a pump, it escapes from the rotating nozzles. It gets sprinkled on the crop as if it is raining. [2]			
22. a) Frying pan handles are made with thermosetting plastics which are resistant to fire and can tolerate heat better than other plastics. For example, Bakelite is a thermosetting plastic which is a poor conductor of heat and electricity. [1] b) Plastic is a non-reactive material. To form rust it should react with water and oxygen like iron. Hence plastic does not form rust. [1]			
23. Given: $F = 200 \text{ N}$, $A = 5 \text{ m}^2$, $P = ?$ $P = F/A$ $= 200/5 = \underline{40 \text{ N/m}^2 \text{ or Pa}}$ [2]			
24. Advantages of Friction: It help us walk on the ground, brakes in a car make use of friction to stop the car and meteors are burnt in the atmosphere before reaching Earth due to friction. Disadvantages of Friction: Friction produces unnecessary heat leading to the wastage of energy, it reduces the efficiency of machines, Forest fires are caused due to friction between tree branches, it wears out steps of staircases in buildings and foot over bridges. [2]			
25. Petroleum was formed from organisms living in the sea. As these organisms died, their bodies settled at the bottom of the sea and got covered with layers of sand and clay. Over millions of years,			

the absence of air, high temperature and high pressure transformed the dead organisms into petroleum and natural gas. [2]

26. [2]

Endangered Species	Extinct Species
1. Endangered species are those which are facing the danger of extinction.	1. Extinct Species are those which no longer exist on earth.
2. Example: desert cat, tiger, snow leopard etc.	2. Example: dinosaur, dodo, cave lion etc.

27. a) **Kharif crops:**

- Grown in the rainy season during the month of June to October.
- Known as summer or monsoon crop.
- Seeds of these crops are sown at the beginning of the monsoon season because these crops require a good amount of water.
- Harvested by September or October.
- For example: Maize, sugarcane, soybean, groundnut, and paddy.

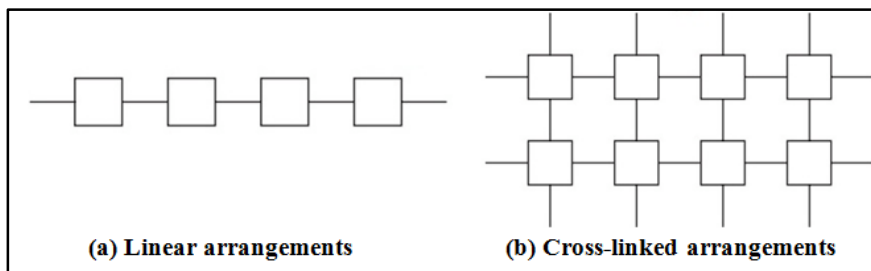
Rabi crops:

- Sown in the winter season which is between November and December.
- Known as winter crops.
- Harvested in March or April.
- Require less water to grow.
- For example: Wheat and Barley. [2]

b) Plough- Tilling, adding fertilisers to the crop, removing weeds [1]

28. a) Catch fire easily, will melt on heating and stick to the body of the person wearing it. [1]

b) [2]



29. a)

[2]

BALANCED FORCE	UNBALANCED FORCE
Equal forces acting on one object in opposite directions are called balanced forces.	Unequal forces acting on one object in opposite directions are called unbalanced forces.
The state of motion of the object remains unchanged.	There is a change in the state of motion of the object.
Net force is zero	Net force is not zero

b) Some people feel their ears popping at the top of the mountain due to the decrease in the air pressure. The ears pop in order to balance the difference in pressures inside and outside of the body.

[1]

30. a) Given: $A = 50 \text{ m}^2$, $P = 300 \text{ Pa}$, $F = ?$

$$F = P \times A$$

$$= 300 \times 50 = \underline{\underline{15000 \text{ N}}} \quad [2]$$

b) Both are non-contact forces, and both are attractive as well as repulsive forces. [1]

31. a) Friction comes into play when irregularities present in the surfaces of two objects in contact get interlocked with each other. In sliding, the time given for interlocking is very small. Hence, interlocking is not strong. Therefore, less force is required to overcome this interlocking. [1]

b) The frictional force exerted by fluids is called drag.

Factors affecting friction are speed, shape, size of the object and nature of the fluid. [1+1]

32. a) The slow process of conversion of dead vegetation into coal. [1]

b) It is black in colour and as hard as a stone, it mainly consists of carbon, it burns in the presence of air and produces carbon dioxide gas and heat, it is a combustible substance which means that it can be burned, hence it is used as a fuel. [Any 2 – ½ + ½]

c) We find the oil layer above the water layer because oil is lightweight and thus floats over it. Also, the density of oil is less than water so it floats on the water surface. [1]

33. a) This act is aimed at the preservation and conservation of natural forests and meeting the basic needs of the people living in or near the forests. [1]

b) It is the sourcebook which keeps a record of all the endangered animals and plants. This book is mainly created to identify and protect those species which are on the verge of extinction. [2]

34. a) Unhealthy seeds or damaged seeds become hollow and thus are lighter, so they float on water. [1]

b) The undesirable and unwanted plants which grow naturally along with the crop are called weeds. The process of controlling the weed is called weeding. Weeding is done manually by using khurpi and by using machines. Weeds are also controlled by using some chemical substances like 2, 4-D. These chemicals are called weedicides and are used to kill and destroy weeds. [1+1]

c) Manure is considered better than fertilisers because it- enhances the water-holding capacity of the soil, makes the soil porous due to which exchange of gases becomes easy, increases the number of friendly microbes, and improves the texture of the soil. [2]

35. a) Petroleum Conservation Research Association. Drive at a constant and moderate speed as far as possible, switch off the engine at traffic lights or at a place where you have to wait, ensure correct tyre pressure, Ensure regular maintenance of the vehicle. [2]

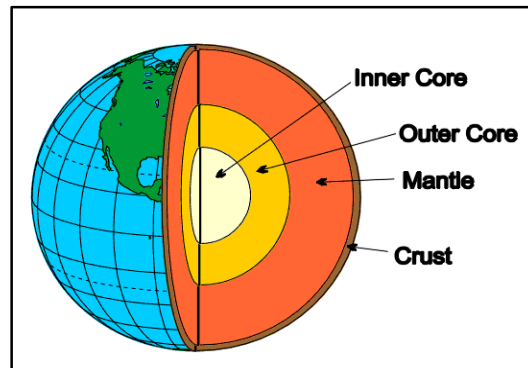
b) CNG stands for Compressed Natural Gas. It is considered to be a better fuel because it burns with a smokeless flame and causes no air pollution. It also does not produce any poisonous gases on burning. [2]

c) The process of separating crude oil into usable components. [1]

36. a) A lightning conductor is a metallic rod, taller than the building, installed in the walls of the building during its construction. One end of the rod is kept out in the air and the other is buried deep in the ground. If the lightning strikes a building, it will first hit the top of the lightning conductor rather than the building. The lightning conductor is made of a metallic rod so it provides an easy route for the transfer of electric charges to the ground. The electric discharge occurs through the conductor without harming the building. [2]

b) When we take off woollen sweaters, it rubs against our shirt. The rubbing together of the sweater and shirt produces opposite electric charges on them. The discharge of these electric charges produces a crackling sound. [1]

c) [2]



37. a) Friction can never be eliminated but it can be reduced. No surface is perfectly smooth. Some irregularities are always there on surfaces. [1]

b) Heavier mass will press harder into the irregularities and offers greater resistance to motion that is greater friction. [1]

c) A lubricant is a substance that forms a thin layer between the two surfaces in contact. It fills the depressions on the surface and makes it smooth thus helping in reducing friction. e.g. Oil, grease. [2]

38. a) Deforestation is the large-scale cutting of trees for various purposes. This is done for: • Procuring land for agricultural use • Building industries and houses • Making furniture or using wood as fuel. [1]

b) Cutting trees leads to the accumulation of carbon dioxide in the atmosphere. Carbon dioxide traps heat rays from the sun which are reflected by the earth. This results in an increase in temperature on earth. [1]

c) Removal of the top layer of the soil exposes the lower, hard and rocky layers. This soil has less humus and is less fertile. Gradually the fertile land gets converted into deserts. It is called desertification. [2]

39. a) Tremors or vibrations caused by the earthquakes which travel in the form of waves within the earth or along the earth's surface, are called seismic waves. Seismograph is an instrument which records these waves. [1]

b) Tremors on the earth can also be caused when a volcano erupts, or a meteor hits the earth, or an underground nuclear explosion is carried out. [1]

c) If you are at home - Take shelter under a table and stay, there still shaking stops. Stay away from tall and heavy objects that may fall on you. If you are in bed, do not get up. Protect your head with a pillow. If you are outdoors - Find a clear spot, away from buildings, trees and overhead power lines. Drop to the ground. If you are in a car or a bus, do not come out. Ask the driver to drive slowly to a clear spot. Do not come out till the tremors stop. [2]