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ID = 16068.

SUBJECT = GEOLOGY.

SECTION = A.

SANESTER = SECOND.

DEPAETMENT = BS CIVIL.



QUESTION=01.

A) Rock is broken down by frost, rain, and sun at point A. what name is given to this process?

ANSWER=

The name given to this process is Geological Weathering.

Weathering is the breakdown of rocks at the Earth's surface, by action of rainwater, extremes of temperature, and political activity.

Weathering is the wearing away of the surface of rocks, soil, and minerals into small pieces.

Example

Wind and water causes small pieces of rock to break off at the side of a mountain, ice wedging, and plant roots etc.

B) How is sediment grains in a river changed during transport from A to B? State two differences in the likely appearance of the grains.

ANSWER=

Sediments transport occurs in natural systems where the particles are clastic rocks (sand, gravel, boulders etc.), the fluid is air, water or ice and the force of gravity acts to move the particles along the sloping surface on which they are resting.

The prolonged transport of sediment by water and wind current affect the particles ways are:

- 1) Reduction in particles size.
- 2) Rounding of originally angular fragments.
- 3) The greater the distance of transport, the smaller and more rounded the grains.

C) How do loose sediments at C become changed into solid rock?

ANSWER=

Sedimentary rocks are formed when sediment is deposited out of water flows carrying the particles in suspension. This sediment is often formed when weathering and erosion break down a rock into loose material in a source area.

As the chemicals that come from the minerals or biological precipitation mix with sediments on the floor of the ocean or lake they crystalize and grow in the spaces around the sediment. When these crystals grow large enough to fill the spaces they harden and form a solid rock. This process is called cementation. These processes eventually make a type of rock called sedimentary rock.

D) Rocks that are deeply buried in the Earth's crust may undergo metamorphism. Describe two changes that happen in rocks during metamorphism and explain point D?

ANSWER=

Metamorphic rocks start off as igneous, sedimentary, or other metamorphic rocks. These rocks are changed when heat or pressure alters the existing rock's physical or chemical make-up.

The two changes that happens in rock during metamorphism are

1) Size and shape changes:

Size and shape changes occur due to changing of temperature on rock, causing the rock to break apart.

2) Mineral changes:

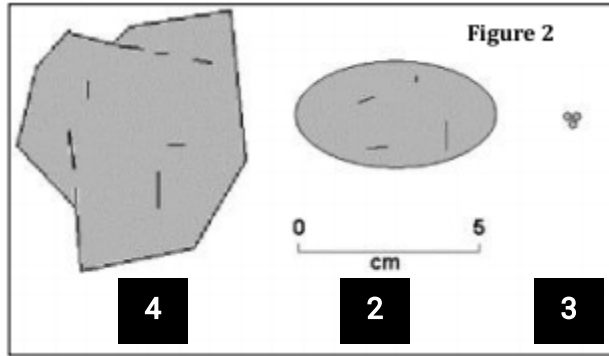
The change occurs due to heat, pressure and chemically active fluids.

From point **D** metamorphic rock can change into igneous or sedimentary rock. When hot liquid **magma** is cooled their minerals can form crystals. At the surface metamorphic rocks will be exposed to weathering processes and may break down in to sedimentary rocks, which would starts the entire cycle anew.

QUESTION= 2.

(i) In each box, write down the most likely number from the Deposit produced column in the table.

1	Clay mud
2	Rounded pebbles And sand
3	Sloping sand layers
4	Angular boulders



(ii) In your own words, explain how sediment particles change as they are transported downstream by a river.

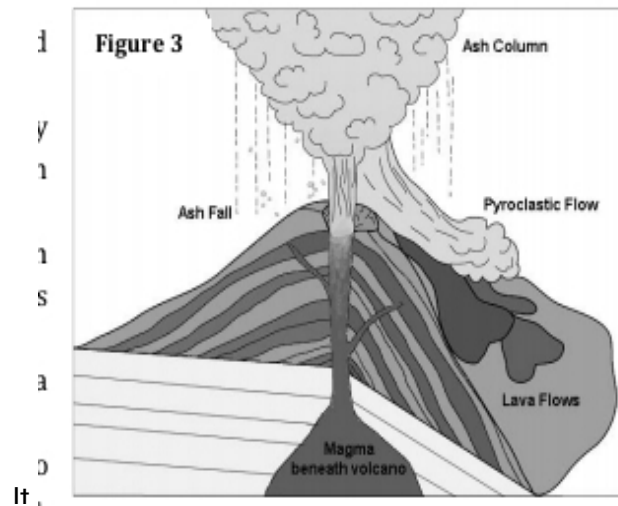
Ans Sediments are most often transported by water, but also wind and glaciers.

Beach sands deposits are caused by river transport and deposition, sediment also often settles out of slow-moving or standing water in lakes and oceans. When sediments is transported and deposited, the mode of transport is by sliding down a slope, the deposits show the wide variety of particle sizes. The changes occurs in sediments are during erosion process and also the process of deposition, in which main factors are

- 1) The setting rate.
- 2) The boundary layer shear stress.

Examples of sediments are breccia, conglomerate, sandstone, and siltstone are mechanical weathering and rock salt, iron ore, flint, and some lime stones, are form when dissolved materials participates from solution.

QUESTION NO =3.



- (I) What type of volcano is shown in the figure by shape and if eruption is more often, which category it fits?

ANSWER=

The type of volcano shown in the given figure is **Composite Volcano**.

If eruption is more often, composite volcano fits this figure.

- (II) The Eruption shown in figure 3 is producing an “Ash column” that rises thousands of meters about the volcano summit.

When the boiling fragments of liquid magma hit the cold air they freeze into individual dust particles, driven upwards towards the high atmosphere by the power and heat of the eruption.

(a) Explain how gases trapped in the magma help produce the ash column.

ANSWER=

Magma contains dissolved gases, which provide the driving force that causes most volcanic eruptions.

As magma rises towards the surface and pressure decreases, gases are released from liquid portion of the magma and continue to travel upward and are eventually in to the atmosphere.

(b) Many people around the world live close to volcanoes so, when a volcano erupts, thousands of lives may be at risk.

(i) Suggest ONE sign that might indicate if a volcano is about to erupt.

ANSWER =

“Three signs may include very small earthquakes beneath the **volcano**, slight inflation, or swelling, of the volcano and increased emission of heat and gas from vents on the volcano”.

(ii) Suggest two dangers that might result from Ash fall near a volcano.

ANSWER=

Health concerns after a volcanic eruption include infectious disease, respiratory illness, burns, injuries from falls, and vehicle accidents related to the slippery, hazy

conditions caused by **Ash**. When warnings are heeded, the chances of adverse health effects from a volcanic eruption are very low.

QUESTION NO 4=

In the table below are statements that refer to either weathering or erosion.

Complete the table by writing weathering or erosion in the spaces provided.

Answers:

(i) In the table below are statements that refers to either weathering or Erosion. Complete the table by writing Weathering or Erosion in the spaces provided.

Statement	Weathering or Erosion
Breakdown of rock without it being moved	Weathering
Wearing away of rock during transport of rock particles	Erosion
A process caused by wind, running water and moving ice	Erosion
An effect of plant roots growing in rock joints and fractures	Weathering

- (ii) A statue was made from limestone. Rain makes limestone weathering more quickly than sandstone. What substance in the rain water causes this?

ANSWER=

Rain water (H_2O) is naturally slightly acidic because **carbon dioxide** and form weak **carbonic acid**, from the air dissolves in it. When this weak acid comes into contact with **calcite**, causing the rock to be weathered. Such as limestone's, chalk or **calcium carbonate**.

- (iii) Why igneous rocks never contain fossils?

ANSWER=

Igneous rock does not contain any fossils. This is because any fossils in the original rock will have melted when the rock melted to form magma. Igneous rock is Intrusive rock and they form under earth crust under high pressure and high temperature.

- (iv) Granite takes much longer to cool deep underground than basalt lava at the Earth's surface. How and why is the size of the crystals in granite different from the size of the crystals in basalt?

ANSWER=

Igneous rocks contain randomly arranged interlocking crystals. The size of the crystals depends on how quickly the molten magma solidified.

Magma that cools slowly will form an igneous rock with large crystals.

Lava that cools quickly will form an igneous rock with small crystals.

Plutonic rocks, which cool slowly underground, have large crystals because the crystals had enough time to grow to a large size.

Volcanic rocks, which cool quickly above ground, have small crystals because the crystals did not have enough time to grow very large.

- (v) **Describe one process that might be responsible for producing the large, poorly sorted fragments in the scree sediment collecting at the bottom of the cliff?**

ANSWER=

Sediment is solid material that is moved and deposited in a new location. Sediment can consist of rocks and minerals, as well as the remains of plants animals. It cab as small as a grain of sand or as large as a boulder. Sediment moves from one place to another trough erosion process.

The End.