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Name :- Malik Babar Zaman
Khan

ID :- 16274

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Paper :- Geology

ANSWER No: A

Figure 1:

- Weathering
- Grains get smaller and more rounded
- Reasonable description of compaction and cementation processes
- Changes to minerals (re-crystallization + chemical reaction to form new minerals), and textures (tendency for minerals to align forming foliation). Also, tendency for rocks to become hard/less porous as a result.

Point 1): Metamorphic processes

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occur here due to pressure and heat.
Heat & pressure - these are agents of change, not the changes themselves.

"ANSWER B"

Figure 2:

- i) 4, 2, 3. in boxes zoom left to right
- ii) Become smaller and more rounded (due to attrition).

ANSWER No: C

Figure 3:

I. The volcano shown in figure 3 belongs to active volcanoes category. The type of the volcano shown is composite volcano.

II.

a) Gases are released due to loss of pressure as the magma approaches

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the surface, causing it to push up and explode as eruption takes place. Rock and pumice fragments are then thrown high into the atmosphere.

- b)
 - i) minor earthquakes (associated with rising magma)
 - ii) i): respiratory damage or death (ash is very damaging to lungs) ii): pollution of water supplies

ANSWER NO: 1)

I):

Statement	Weathering OR Erosion
Breakdown of rock without it being moved	Weathering
Wearing away of rock during transport of rock	Erosion

(4)

particles.

A process caused by wind, running water and moving ice

Erosion

An effect of plant roots growing in rock joints and fractures

Weathering

II): Carbonic acid found in rain makes limestone weather more quickly than sandstone. Carbonic acid is an acid that comes from carbon dioxide when it dissolves in water. Anywhere from acid, sulphur dioxide (SO_2), carbon dioxide (CO_2), can cause that quick weathering.

I): Igneous rocks never contain fossils because:

⇒ Formed in conditions where plants or animals or living things could not exist

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⇒ Magma is too hot for plants or animals to survive.

IV): The size of the crystals in granite is different from the size of the crystals in basalts because:

Granite is intrusive, which means that the magma was trapped deep in the crust, and probably took a very long time to cool down enough to crystallize into solid rock. This allows the minerals which form plenty of time to grow, and results in a coarse-textured rock in which individual mineral grains are easily visible.

While Basalt is extrusive, the magma cools down very quickly and many crystals form very quickly, and the resulting rock is fine-grained, with crystals usually less than 1mm in size. The crystals in granite are larger or bigger than basalt.

V): Freeze-thaw (frost-shattering). Water

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Seeps into joints and expands when it freezes, forcing the rocks apart. Process repeated over time breaks rock away from cliff to form scree.