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Programme B-tech (civil)

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Instructor

Subject Engineering geology

Paper Solution

Q#01

=> Importan of Geology in civil Engineering or

Geology is the study of Earth, the materials of which it is made, the structure of those materials and the effects of the natural forces acting upon them and is important to civil Engineering because all work performed by civil engineering involves Earth and its features. Fundamental understangi of geology is so importand that is a requirment in university level civil engineering progreame.

For civil Engineering Project to be Succesful the Engineer must understand the land upon which the projects rests. Geologists study the land of determine whether it is stable enough to support the suppose projects.

They also study water patterns to ~~dete~~ determin if a particuler site is a prone flooding. Some civil Engineers use geologists to examins rocks for important metals, oil, natural gas and ground water.

⇒ Involvement of Geology in Construction:-

Geology is obviosly one of the most important factor in construction since Construction take place either at the surface or below the surface. Hence geology has an important influece on most construction operations since it help determine their nature form and cost.

Q#02 @

Ans:@ This is the list of ~~volcanic~~ activity and extinct volcanoes in Pakistan. Most of these are mud volcanoes rather then the conventional magmatic type.

=> List of volcanoes:-

Koh-i-sultan (Extinct magmatic)	-	-	-	-	*
Malan Island (Mud volcano)	-	-	-	-	
Jebel e Ghurab (Mud volcano)	-	-	-	-	
Chandragup (Mud volcano)	-	-	-	-	
Hingol (Mud volcano)	-	-	-	-	
Tor Zawar (Fissur vent)	-	-	-	2010	
Gawadar new small Island (Mud volcano)	-	-	-	2013	

=> Positive change of volcanic activity:-

- The creation of new land. It creat new land by lava hardening which can be lived on by human e.g. Ice land.
- Fertile soil. volcanic soils are very fertile
- Tourism. Dormant volcanoes attract thousand of tourists from around the world.
- Geothermal energy.

Q#02 (b)

The attempt to correlate the minerals composition of igneous rock with the chemical composition of their magmas that is, of each rock as a whole is rendered difficult by the chemical character of the rock making minerals themselves and by the facts ~~no~~ that no fixed association of mineral necessarily result from the crystidization of an igneous rock megma. the association in a given case being effected to the greater or less extent by the physical condition attending the solidification of magma.

xxx xxx xxx

Q No 3

Ans:- weathering occurs by the cause of disintegeration of rock near the surface of the Earth plant and animal life, atmosphere and water are the major cause of weathering.

weathering break down and loosen the surface minerals of rock so they can be transported away by agents of erosion such as water, wind and ice.

weathering ~~form~~ processes are of three main forms are following.

- Mechanical weathering.
- Organic weatherring.
- chemical weatherering.

=> Mechanical weathering or Mechanical weathering is also known as physical weathering. Mechanical weathering is the physical breakdown of rock into smaller ~~Peices~~ Peices. one of the

Most common mechanical action in frost shattering. It happen when water enters the er pores and cracks of rocks, then freezes. Frost weathering, ice wedging. The process include frost shattering, frost wedging and freeze-thaw weathering.

=> Organic weathering :- organic or biological weathering refers to the same thing. It is the disintigration of rocks as a results of the action by living organism. Trees and other plant can wear away rocks since as they penetrate into the soil. Eventually, the plants breaks the rocks a part.

=> Chemical weathering :- Its happens when rocks are worn away by chemical changes. The natural chemical reactions with in the rocks change the composition of rock over time. Because the chemical process are gradual and ongoing, the mineralogy of the rocks changes over time Thus weaking them wear away, dissolve, and disintigrate.