

ANSWERS TO ENTRANCE 2011

(1) Quartz feldspars are light coloured minerals while ferromagnesian minerals are dark colour minerals.

(2) Basalt, basanite, granite, micro granite, sandstone.

(3) Pyroxenes show an 8 sided cross section while amphiboles show 6 sided cross section on the microscope.

(4) Fine grain rocks, rhyolites, andesites and basalt. Coarse grain rocks, diorite, granite, peridotite, gabbro.

Silicic rocks; rhyolites, granite, intermediate rocks; diorite, andesites, mafic rocks; peridotite, basalt, gabbro.

(5) Geothermal gradient = $35^{\circ}\text{C}/100\text{m}$ (35°C)

Depth = 35km.

1km = 35°C then, 35km = X

X = $1225^{\circ}\text{C}/\text{km}$

(6) Dust =, 1/8mm, ash = 1/8 - 2mm, cinder = 2- -64mm, blocks, 64mm, bombs, 64mm.

(7) Tuff; small particles of pyroclastic materials which are usually deposited further away from the vent as they are blown by wind.

Volcanic breccia; large fragments of pyroclastic materials (Lombs) that accumulate around the vent of a volcano

(8) Physical disintegration. Water, air.

(9) Crust, mantle and core. Core. Crust.

(10) The oceanic crust is made up of basalt, while the continental crust made up of granites.

(11) Relatively rigid means that it is strong (solid) or cannot flow plastically.

(12) Quartz, alkaline feldspars and micas.

(13) Halite = NaCl quartz = SiO_2 .

(14) No because the change in the rock during physical weathering is only physical. No chemical change is involved.

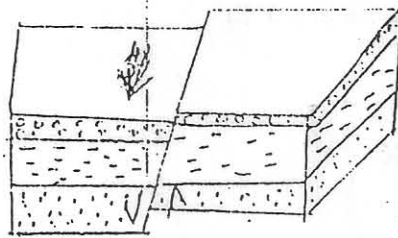
(15) Clay minerals

When a feldspar undergoes hydrolysis, a clay mineral and silica as shown in the following equation, $6\text{KAlSi}_3\text{O}_8 + 9\text{H}_2\text{O} - 6\text{KOH} + 3\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4 + 12\text{SiO}_2$. Usually marked by certain characteristic physical, chemical and biological conditions. Examples include deep sea floor, a desert valley, a river channel, a lake bottom, a beach.

(16) They are characterized by features such as terraces, foreset beds, current bedding.

(18) Greywackes, contains quartz, feldspars, and has a fine grain matrix, while arkose is made up of quartz, >25% feldspars, and a coarse grain matrix. Quartz sandstone, is made up of > 90% of quartz, no feldspars, and has a fine grain matrix.

(19)



Normal fault



Contact metamorphism between a granitic Pluton and a Sedimentary rock.