

IQRA NATIONAL UNIVERSITY  
PESHAWAR.

B.tech → Civil  
BAICH → 2015  
paper → Engineering geology  
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DATE — 24/6/2020

Mid term exam.

## Question No 1

Why is geology essential when it comes to the domain of Civil engineering? Analyze the involvement of geology in all the aspects of the construction project?

→ Importance of geology in civil engineering

Geology is the study of earth of which the material as the structure of those material and the effect of the natural forces acting upon them and its importance to civil engineering because all work performed by civil engineers involve earth and feature.

→ Engineering geology may be defined as application of geological principle to engineering problem as especially in civil engineering project.

→ Civil engineering as founded on material which have been formed by geological processes.

→ Systemtic knowledge regarding site

→ the knowledge of geological work of natural agent such as water wind etc

→ Feature of area and possible design of foundation

- which has cost us 1 billion \$ or more.
- which gain large public attention
- these project may include bridge tunnels highway air port power plant oil and natural gas extraction dam tower planing etc.

Question No = 2 part A

Give some possible reason of post-volcanic changes.

- Causes of volcanoes
- Effect of volcanoes.

Causes of volcanoes:-

When a part of the earth's upper mantle or lower crust melts, magma forms. A volcano is essentially an opening or vent through which this magma and dissolved gases are discharged.

Although several factors trigger a volcanic eruption three predominant

the buoyancy of the  
magma the pressure  
from the exsolved gases  
in the magma and  
the injection of new  
batches of magma  
into already filled  
magma chambers.

The buoyancy  
of the magma. As rock  
inside the earth melt  
its volume increase producing  
a melt that is less  
dense than the surrounding  
rock the lighter  
magma then rises toward  
the surface by virtue  
of its buoyancy. Finally  
the magma reaches  
the surface and  
erupts.

other secondary effect include

Food / water supply interrupted

Homeless

Businesses forced to close

Cost of insurance claims.

unemployment

long term issues with  
tourism ~~in~~ industry.

## part B

### Ingenous Rocks:-

Three principle rock type  
Cingenous ~~rock~~ Sedimentary  
and ~~metmentary~~ metamorphic  
Ingenous rocks can be  
through of as  
primary rock because  
from the liquid  
sedimentary and amorphous  
rocks which will stud  
latter may be through  
of drive force of  
Rocks.

Ingenous rock  
and rock formed from  
the crystallization of  
liquids (molte rocks)  
Ingenous rock may  
be divided into



Categories Intrusive or  
plutonic rock crystallize

from magma beneath  
the earth surface

Extrusive or volcanic rock  
crystallize from

lava at the earth  
surface.

The texture  
of an igneous (fine grains)  
at depend on the rate

of cooling allow  
large crystals to

yield from first cooling  
small crystals

Magma and their regular  
plutonic rock bodies

both cooling crystallize  
slowly and characteristically  
by coarse grained.

### Question No 3

Why does weathering occur?  
Make a comparative analysis of  
different from weathering.

weathering occurs:-

Physical weathering is caused by  
the effect of changing  
temperature of rock causing  
the rock to break apart  
the process of some types  
assist by water -

Freeze thaw occurs  
when water constantly  
seeps into cracks, freezes  
and expands eventually  
breaking the rock  
apart.

Comparative analysis to different  
from weathering.

→ plant Activity the  
root of plants are  
very strong and can  
grow into the  
cracks in existing  
rock.

→ Animal Activity  
Centern animals such as  
mole rabbit and ground  
hogs dig holes in the  
ground that can  
exposed underlying rock  
to the effect of  
weathering.

→ Frost action  
→ Thermal expansion  
→ Exfoliation.