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Section B.
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Final Assignment.

QUESTION # 1.

What cause earthquakes? if the Richter magnitude reaches at 8 or above what will happen be the consequences?.

ANSWER.

The earthquake is caused due to sudden slip on a fault. when the stress over comes on the edges of friction. And the earthquake that release energy in wave form that travel through the earth crust and the shaking that we feel.

(OR)

Earthquake are usually caused when rock underground suddenly breaks along a fault. This sudden release of energy caused the seismic waves that make the ground shake. When two blocks of rock are rubbing against each other - they stick a little. When the rock-break the earthquake occurs.

Richter magnitude reaches at 8 or above in that will be the consequences.

When the richter magnitude reaches at 8 or above it destroys the whole building, bridges, and roads.

Differentiat Primary waves & Secondary waves.

Primary waves

- The first kind of body waves are called primary waves.
- ⇒ First wave to hit Seismographs
- ⇒ They are compression waves.
- ⇒ P-waves can move through solids and liquids.

Secondary waves

- The second type of body waves are called secondary waves.
- ⇒ Second waves to hit Seismograph.
- ⇒ They are shear waves.
- ⇒ S-waves can only move through solids.

QUESTION # 2.

Describe the role of Geology in Selection of Dams and reservoirs?

ANSWER.

In this article we are going to cover the topic about Dams and reservoirs. Selection criteria required for the site of the dam and on what basis the type of dam is selected for a particular site and the factors effecting the selection of site for dam. A Dam is an obstruction or barrier built across a river or natural stream to create a reservoir. For impounding water get collected is called up stream water side and the other side of the barrier is known as downstream side. Suitable foundation must be available

Selection of sites must be on the following basis.

Topographically. most suitable places must choose for construction ideally it must be a narrow gorge or a small valley with enough catchment area available behind so that calculated amount of

Water can be easily store in the reservoir created upstream. The location of spill way. All dam should have an adequate spillway for passing fluid flows. If a river gorge is narrow, then there may not be sufficient spillway width available at a suitable location on the periphery of the reservoir has to be found to locate a spill way.

Possibility of river during construction.

The way, river can be diverted at a particular sit for making way for construction of the dam may effect the design of the dam. and also the construction schedule.

Sedimentation Possibilities.

The average quantity of sediment carried by the river has to be known as precisely as possible which would give an idea of the rate at which a proposed reservoir may get filled up.

Technically

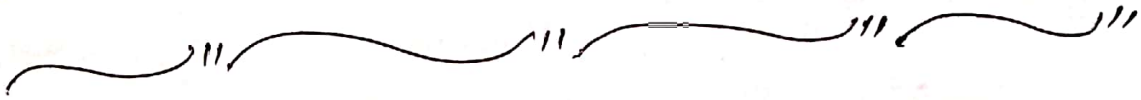
The dam site must be sound as possible strong impervious and stable strong rocks, make the job of designer easy. Impervious silt insure

better storage and victories site must be stable with respect to seismic shocks & slopes failures around the dam.

Constructionally: The site should be far from the material which will be used for the construction. There non availability will make the cost of project high.

Human welfare.

Site selection should be done in such way that it must cause minimum damage to public in the destruction or failure.



QUESTION # 3

What are the different type of mass wasting?
Also explain the protective measure of land slide.

ANSWER.

Types of mass wasting.

1) Slumps.

Rock & Debris Fall

Rock & Debris Slides

2) Flow

3) Creep

Solifluction.

Permafrost.

1) Slumps: It is that type of mass wasting slides wherein downward rotation of rock occurs along a curved surface due to over make excessively steep.

2) Flow: The flow of soil and regolith containing a large amount of water is called flow.

3) Creep: It is the gradual downhill movement of soil and regolith.

Solifluction: It is that type of mass wasting when the flow of saturated soil move downslope at a rate of few millimeters or a few centimeters per day or per year. is called Solifluction.

Permafrost: The slow landslide due to slowly melting of permanently frozen ground is called permafrost.

Protective measure of land slide.

Reinforcement of floor slabs and external wall in existing building. The installation of drainage pipe for rainwater, slope drainage. The planting of slopes that are vulnerable to landslide with deep rooted trees and shrubs.

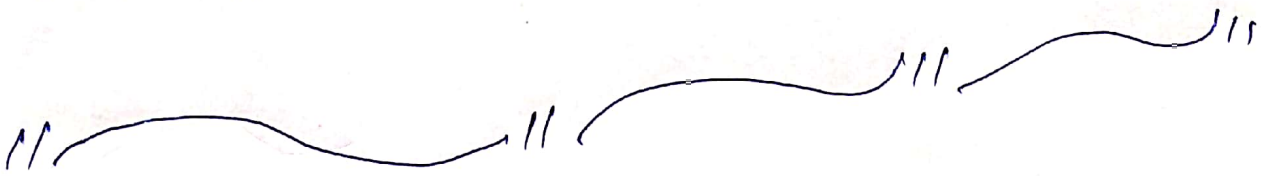
Biological measure: Drainage and/or gracing of slope profiles increase the shear resistance. Supporting structures such as anchors and piles (pinning of the soil plane) can restrain landslides. removal of material in the driving section or material deposition in the breaking section.

Can prevent further descent of the sliding body. Planing measure and local protection.

The use of slopes prone to land slide must be avoided, or uses suitably modified hydraulic and electrical connection must be flexible.

Organizational measure:

The relatively long advance warning period permits timely evacuation.



QUESTION#-4.

Fault: Fracturing and displacement of Rock Strata.

Joint: Fracturing along which no displacement has occurred.

Fold: In response to compression force the strata may bend and local buckle this are called folds.

(a) What do the normal faults cause to the crust of the earth?

Fault are caused by three types of stress Tensional Stress is when rocks slabs are pulled apart from each other causing Normal faults with Normal faults. The hanging wall slabs downward relative to the footwall. The movement along faults is what causes earthquakes.

(b) Fold develop in which type of Rock .?

The Fold may develop in any type of Rock and may be of any Shape and flexures.

(c) What is the effect of faulting on outcrops.?

Faulting is essentially a process of rupturing and displacement along the plane of rupture its effect may involve change in the elevation of the ground omission of some strata where they are normally expected repetition of some strata in a given direction and displacement and shifts in the continuity of the same rock in certain region.

(d) ANSWER. It must be avoided to possible extent to be built on all three.



QUESTION #5.

Soft ground Earth worker dig soft ground tunnels through clay, silt sand, gravel or mud.

Hard Rock. Tunneling through hard rock almost always involve blasting.

Selection of Tunnel Rout.

There might be available many alternate alignment that could connect to point through a tunnel. However the final choice would be greatly dependent on the geological constitution along and around ~~city~~ alternative the ~~extra~~ alignment having best geological negative factor would be the obvious choice.

Selection of Excavation method.

Tunneling is a complicated process in any situation and involve huge cost which would multiply many fold if proper planning is not exercise before starting the actual excavation and the excavation method are ~~antimatly~~ antimatly

link with the type of rock to be excavated. Choice of the right method will therefore be possible only when the nature of the rocks, and the ground all along the alignment fully known. This is one of the most important aim and object of geological investigation.

Assessment of Cost and Stability.

This aspect of the tunneling project are also closely interlinked with the 1st three consideration. Since geological investigation will determine the line of actual excavation. The method of excavation and the dimension of excavation as also the supporting system of the excavation all estimate about the cost of the project would depend on the geological detail.

Assessment of Environmental Hazards.

The process of tunneling whether through rocks or through soft ground and for whatever purpose involve disturbing the environment of an area in more than one way. The tunneling method might involve vibration and use through blasting or ground cutting and drilling.

The END.