

Chapter 4 Safe Construction Practice

Question-1

What should be the configuration of an earth quake resistant building?

Solution:

Building should have a rectangular plan to make them earth quake resistant. There should be reinforced concrete columns to support long walls. Large buildings should be fragmented into small rectangular blocks.

Question-2

How should the foundation be constructed in soft and firm soil?

Solution:

Tilting, cracking and failure of structure can result from soil liquefaction. So the foundation of the building should be strong. Building constructors should ensure that there is no movement of underground soil once the building is built.

If the soil is soft the foundation has to be deeper, if the soil is firm the foundation can be moderate.

Question-3

Which are the most vulnerable homes during floods?

Solution:

Buildings constructed with mud and bricks get damaged easily during floods.

Thatched huts and small houses with tinned roofs also get damaged during floods.

People who occupy the flood plains of rivers are most affected by floods.

Question-4

What are the general protection measures for buildings against flood damage?

Solution:

Damage to houses during flood has to be minimised. The first and foremost thing to be done is prevent inundation of flood waters.

People should avoid building houses on river banks or near the sea coast. Houses should be built at least 250 meters away from the river banks. The government should ensure proper drainage system.

Buildings should be built on an elevated platform. Buildings in flood prone areas can be built on stilts or columns.

Question-5

What are the considerations for selecting the site in areas prone to landslides?

Solution:

The site most suited to build houses in landslide prone areas are where the land has not moved in the past. Flat surfaces away from sudden slopes and areas at the top or along the ridges are also suited for building houses.

Question-6

Write about the slope stabilisation methods by drainage.

Solution:

Surface drainage system should be kept away from steep slopes, loose soil and non-vegetated land.

Water that drains from the roof and other areas like the portico should not be allowed to flow down the slopes. This water should be drained through the drain pipes.

Question-7

What are the desirable plan forms and orientations for cyclone resistant buildings?

Solution:

The shape of an individual building should be either circular or polygonal in cyclone prone areas. Rectangular or square shapes are not suited. A symmetrical building with a compact plan is most suited to withstand cyclones.

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