**Sub: Environmental Studies.**

**For BA 2nd and 4th Sem .**

**Topic :**

**Disaster management : floods, earthquakes, cyclones and land slides.**

 Disaster is a sudden, calamitous event bringing great damage, loss, destruction and devastation to life and property. Generally, disaster are of two types - Natural and Man-made. Some of the disasters are listed as follows major natural disasters i.e. flood, Cyclone, Drought and Earthquake. Minor natural disasters i. e. Cold wave, Thunderstorms, Heat waves, Mud slides Storm.

 Major man-made disaster are Setting of fires, Epidemic,Deforestation, Pollution due to prawn cultivation, Chemical pollution, Wars. Minor man-made disaster are Road/train accidents, riots, Food poisoning, Industrial disaster /crisis, Environmental pollution.

 Disaster management : There is no standardized rules defining the different phases of the disaster management cycle. Different agencies use different cycles depending upon their objectives. The different phases of the disaster management cycles are as follows Response, Recovery, Mitigation, Risk reduction, Prevention, preparedness.

 Floods : A flood is an expense of water submerging land. A flood is caused by excess water in a location usually due to rain from a storm or thunderstorm or the rapid melting of snow, the failure of a dam, an earthquake induced tsunami, a hurricane's storm surge and other causes.

 Effects of flood: Physical damage, casualities, water supplies, crops and food supplies.

 Flood management : Flood management involves the following activities are mapping, land use control, construction of engineered structures and flood control.

 Cyclone : Cyclone is an meteorological phenomena in which an area of low pressure characterized by inward spiraling winds that rotate counter clockwise in the northern hemisphere and clockwise in the southern hemisphere of the earth.

 Types of Cyclone : The six main types of cyclones are -

 1.Polar cyclone: Polar or Arctic cyclones are vast areas of low pressure usually spinning 1,000-2000 kms per hour, in which the air circulates in a counter clockwise fashion in the northern hemisphere.

 2.Polar low: A polar low is a small scale, short lived atmosphere system that is found over the ocean areas in both the northern and southern hemispheres . They are part of large class of mesco scale weather systems.Polar low have been referred to by many other terms such as - comma cloud, mescocyclone, polar mesco scale vortex, Arctic hurricane, Arctic low and depression.

 3.Extra tropical: An extra tropical cyclone is called a synoptic scale low pressure weather system that has neither tropical nor polar characteristics .The "extra tropical "refers to the fact that this type of cyclone generally occurs outside of the tropics, in the middle of the latitude of the planet. These systems may be described as "mid-latitude cyclones" or "post -tropical cyclones ".

 4.Sub-tropical: A sub-tropical cyclone is a weather system that has some characteristics of an extra tropical cyclone.It can be a wide band of latitude, from equator to 50.c.ZIYAD is a very dangerous cyclone now affecting Mauritius.

 5. Tropical : A Tropical cyclone is a low pressure cyclone storm system. It is caused by evaporated water which comes off the Ocean and becomes a storm. Tropical cyclones can produce extremely strong winds, tornadoes, torrential rain, High waves and storm surges. These heavy rains and storm surges can produce extensive flooding.

 Policies and Strategies for controlling cyclone.

 1. Installation of Earth Warming System.

 2.Developing communication infrastructure.

 3. Developing Shelter belt.

 4.Developing community cyclone shelter .

 5.Construction of permanent houses.

 6.Training and Education.

 7.Land use control and settlement planning.

 Earthquake: Earthquake is those movement of the crust which make the ground vibrate and shake backward and forward. The shaking of the earth crust proceeds in the form of waves from the center of disturbance. Longitudinal waves, transverse waves and surface waves are the three types of waves.

 Causes of Earthquake.

 1.Techtonic Earthquake : Techtonic Earthquake occurs due to breaking of rocks, raising or sinking of layers of the earth, folding of the strata or vapour seeking to escape from the earth.

 2.Volcanic Activity :These kinds of earthquake are associated with the flow of hot magma interrupting volcanoes These caused extensive damage.

 Effect of Earthquake :

 1.Collapse of man-made structure like building, bridges, towers etc.

 2.Extensive landslides.

 3. Roads damage etc

 Mitigation Measures

 1.Power lines and pipelines can be built.

 2.New building should be constructed with proper earthquake resistant measures.

3.Damage to structure can be avoided by prohibiting restrictions on such earthquake prone zones .

 Landslides : Landslides refers to the downward sliding of huge quantities of land masses. Sliding occurs along steep slopes of hills or mountain. Landslides occur as a result of changes on a slope, sudden or gradual, either in its composition, structure, hydrology or vegetation. The changes can be due to geology, climate, weathering, changing land use and earthquake.