1. **Explain what density is and how it relates to stratification.**

Density = mass per unit volume (g/cm^3)

Stratification = layering of materials

1. **Explain why disaster scales are based on the Order-of-Magnitude concept and interpret graphs with logarithmic scales.**

Order of Magnitude = power of ten

* + Graph is nicer?

1. **Relate natural-disaster risk and intensity to frequency, return period, and consequences (costs).**

More intense = Less Frequent = More costs = Longer Return Period

Return Period = Time Span/Number of Cases

1. **Explain how recent disasters were associated with the concentration or dilution of energy.**

**Energy** causes things to move or change. Many disasters release immense amounts of energy, thus causing catastrophic changes.

Many of the energy sources are **diffuse** (weak, but covering a wide area). To create natural disasters requires the concentration of this energy into a small area.

Other energy sources are **gradual** (weak, but spanning a long time). To create natural disasters requires the energy to continually build-up, allowing sudden release in a short time.

1. **Get the disaster info you need from reliable sources.**

Datpiff.com

1. **List the 1st and 2nd most common elements in the Earth, ocean, and atmosphere.**

Earth Core: FeNi Iron, Nickel

Crust: Oxygen, Silicon

Ocean: Oxygen, Hydrogen

Atmosphere: Nitrogen, Oxygen

1. **Describe how viscosity and compressibility relate to the phase of matter.**

**Viscosity**: measure of how much fluids resist flowing or changing their shape

* + **^ viscosity, ^ resistance, ^ force to change**

**Compressibility:** ability of a material to be squeezed or expanded, so that the mass fills less or more space

1. **Be able to diagnose the type of strain by the way a material deforms.**

**Stress τ** is force per unit surface area, applied **parallel** to the surface.

**Stress** tends to **strain** objects

Strain: Change in shape/size of object

Elastic: shape change then springs back to original when stress released

Plastic: Permanent change in shape

Ductile: Very plastic

Brittle: Not plastic

1. **Explain why gravity affects motion and energy.**

Gravity: attracts matter to each other

F=ma=mg

1. **List the 5 types of energy, and describe what causes them to vary.**

**Work:** depends on the force **F** that pushes or pulls an object over the distance **d** the object moves.

**Potential Energy:** work needed to raise an object of mass **m** a distance **z** against the pull of gravity **g**

**Kinetic Energy:** moving object possesses

**Sensible Heat.** Heat is another form of energy. The heat that we can feel (sense) in the form measurable by temperature

**Latent Heat** is stored (hidden) when matter changes phase from solid to liquid, or from liquid to vapour

1. **Explain (with examples) how energy conservation applies to natural disasters.**

Energy can change form, be conserved

Ex. KE of asteroid converted to heat when striking earth

1. **Describe relationships between force, pressure, stress, strain, energy, and power.**

Force is a push or pull.

**Pressure *P*** is force per unit surface area, applied **perpendicular** to the surface.  
**Stress τ** is force per unit surface area, applied **parallel** to the surface.

**Stress** tends to **strain** objects

Strain: Change in shape/size of object

**Power** is the rate of doing work, or of consuming energy.

1. **Describe population growth and explain why it is important for natural disasters.**

Greater the population, greater the vulnerability to natural disasters

1. **Explain how Earth's carrying capacity and overpopulation are related to the fate of the human race, and anticipate your role in it.**

Overpopulation: population that exceeds carrying capacity of Earth

* + - Quality of life extremely unpleasant
    - Near starvation, receiving minimum food to stay alive