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GEODYNAMIC MODEL. THE LITOSPHERE AND PLATES- Litosphere is the outermost layer of the geosphere. It is located between the surface and a depth of 100 km in continental zones, and 30 km in oceanic zones. It is composed of the crust and the uppermost part of the upper mantle. Both layers exhibit rigid behaviour. The lithosphere is not a continuous layer, but is divided into plates. The plates have clearly defined boundaries that coincide with major landforms, such as ocean ridges, ocean trenches and mountain ranges. The plates may be made up of solely of oceanic lithosphere or they may include part of the continental lithosphere.

MESOSPHERE- Is the largest part of the geosphere and corresponds to the part of the mantle that does not form part of the lithosphere. In this layer, high pressure and temperatures ensure the rock in the mantle is soft and behaves in a plastic manner. In the deepest part, the core boundary, the masses of rocks are extremely hot and become less dense. This allows them to rise through the mantle to the lithosphere.

THE CORE- Is the centre of the planet. Two parts: Outer Core- is liquid. Fast-moving convection currents are produced. The convection currents in the outer core generate the Earth's magnetic field. Inner Core- Is an enormous sphere of solid metal.

AGE OF THE SEABED- Research projects were established to extract rock samples from the seabed. Facts established: 1 Ridges are formed by very young volcanic rocks and are barely covered by sediment. 2 The age of the rocks that form the seabed increases the further away they are from the axis of the ridge, and there are symmetric bands on each side of the ridge. There are no rocks on the seabed that are older. Conclusion: new lithosphere is formed on either side of the ridge axis, and that its rocks move slowly away from the axis in opposite directions. Means that the seabed is expanding slowly.

PALAEOMAGNETISM- When volcanic rocks are in lava form, the magnetic minerals they contain crystallise in an arrangement that depends on the prevailing magnetic field. These minerals maintain the arrangement, reflecting the polarity of the magnetic field.

MAGNETOMETERS- Records variations in the intensity of the Earth's magnetic field. Conclusion: 1 that the Earth's magnetic field has inverted its polarity many times. 2 the only explanation for the symmetrical distribution of the palaeomagnetism bands was that the seabed must have expanded.

THEORY OF PLATE TECTONICS- 1 the lithosphere is divided into rigid fragments called lithospheric plates or tectonic plates. 2 the lithospheric plates are dynamic: they move, increase and decrease in size, and change shape. 3 the plates interact, especially at their boundaries or limits, where there is intense geological activity. 4 the dynamics of the lithospheric plates can explain all the geological processes.

THREE TYPES OF BOUNDARIES: **DIVERGENT BOUNDARIES-** Are those where two plates are separating. **TRANSFORM BOUNDARIES-** Are boundaries where two plates rub together as they grow or move in parallel but in opposite directions. Lithosphere is neither created nor destroyed at these boundaries.