

題號： 53

國立臺灣大學 113 學年度碩士班招生考試試題

科目：地球物理

題號： 53

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1. Explain the concepts of free-air correction and free-air anomaly in gravity measurements. (10%)
2. Explain the significance of the asthenosphere in the Earth's mantle and its role in plate tectonics. (10%)
3. Explain why the majority of earthquakes occur at shallow depths (<30 km). (10%)
4. Explain why the velocity of longer-period surface waves is generally faster than shorter-period surface waves. (10%)
5. In terms of the characteristics of seismic waves, what distinguishes a sub-surface nuclear test from earthquake faulting? (10%)
6. Define seismic anisotropy and provide a few examples of how it influences seismic wave behavior. (10%)
7. Discuss the concept of absolute plate motion and explain why it is more challenging to define than relative plate motion. (10%)
8. Please detail your reasoning about the possibility of the occurrence of a magnitude 8 earthquake within Taiwan. (15%)
9. Please provide two examples of significant research in geophysics from the past two decades, outlining the methods employed and the discoveries made. (15%)

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