

本試題是否可以使用計算機：可使用，不可使用（請命題老師勾選）

考試日期：0301，節次：1

The following paragraphs describe the idea of continental drift. The words underlined have grammatical errors (total in ten). Correct the underlined words with appropriate grammatical form. Please write down your answer followed by the number (marked in the parentheses) or you will lose the points. (20%)

The idea that continents can drift about is calling (1), not surprisingly, **CONTINENTAL DRIFT**.

When Wegener first put forward the idea at (2) 1912 people thought he was nuts. His big problem was that he knew the continents had drifted but he couldn't explain how they drifting (3). The old theory before this time was the "Contraction theory" which suggested that the planet is (4) once a melting (5) ball and in the process of cooling the surface cracked and folded up on itself. The big problem with this idea was that all mountain ranges should be approximate (6) the same age, and this was knew (7) not to be true. Wegener (8) explanation was that as the continents moved, the leading edge of the continent would encounter resist (9) and thus compress and fold upwards forming mountains near the leading edges of the drifting continents. Wegener also suggested that India drifted northward into the Asia is formed (10) the Himalayas and of course Mountain Everest.

Please translate the following paragraphs into Chinese.

1) Like the background microwaves that come from all parts of the sky, there is a nearly constant level of seismic 'noise' at frequencies near 10 milliHerz, which has been called the 'Earth's hum'. It is as energetic as the excitation from a magnitude 5-6 earthquake, so its source must expend as much continually to keep the Earth humming. There are two likely candidates: atmospheric turbulence and ocean waves. The research has been able to show that insufficient energy is involved with turbulence due to winds, but that ocean waves have enough power, perhaps when interacting globally with features on the sea bed. (10%)

2) The Earth is the only tectonically active planet, and indeed its plate movements are astonishingly rapid in a geological sense—about the same rate as toenails grow. Specifically, our planet's activity takes the form of thin, rigid slabs that move on top of a shallow layer of mantle called the asthenosphere. The reduced rigidity of the asthenosphere is signified by the low speeds at which seismic waves travel through it. It is tempting to regard this low-velocity zone as mantle 'on the point of melting', perhaps even with isolated pockets of melt. A more widely held view is that it is due to an increased tendency over its range of depth for mantle minerals to contain defects, whose migration gives rise to deformation in the solid state. Both phenomena are enhanced by water, in the first case if it exists in molecular form, in the second when it dissolves as OH<sup>-</sup> in otherwise anhydrous mantle minerals. Experimental work on how mantle minerals behave at different pressures in the presence of water is able to refine models for the asthenosphere. (15%)

Please translate the following sentences into English.

3) 太陽系包括八大行星。(10%)

4) 二氧化碳及甲烷是造成全球暖化的主要溫室氣體。(10%)

5) 921 大地震（又稱集集大地震）發生時間為 1999 年 9 月 21 日凌晨 1 時 47 分，強度高達芮氏規模 (Richter scale) 7.3 級。此次地震造成台灣極大的損失。(15%)

Please state why you are interested in studying graduate program of Earth Sciences or of Satellite information and Earth Environment. What kind of research project do you like to carry out for your master degree? (It needs to be written in English, within 100 words.) (20%)