

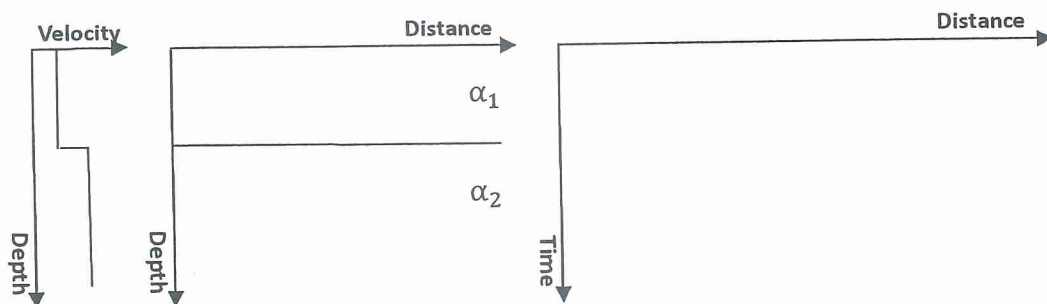
國立中央大學103學年度碩士班考試入學試題卷

所別：地球科學系地球物理碩士班 不分組(一般生) 科目：地球物理學 共 2 頁 第 1 頁  
地球科學系地球物理碩士班 不分組(在職生)

本科考試禁用計算器

\*請在試卷答案卷(卡)內作答

1. Seismic waves can be illustrated as "Ray". Basic models involving seismic p-wave velocity ( $\alpha$ ) change with depth ( $z$ ) can be started with layer-over-half space model.

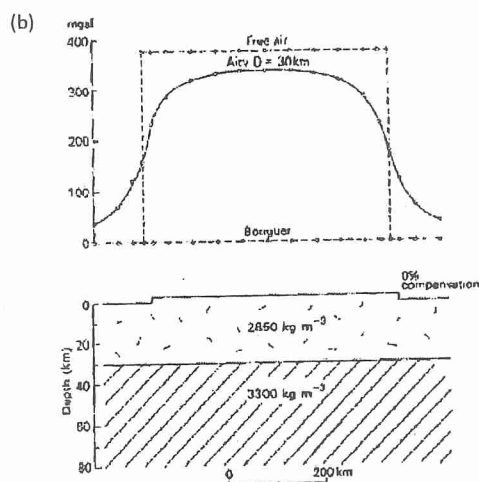
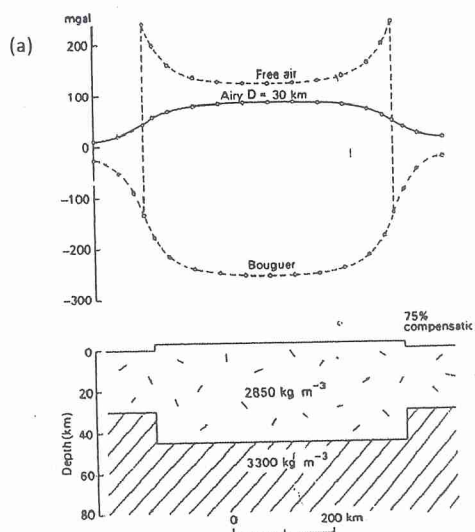


Q1. For middle graph, please draw "ray-path" to indicate the direct; reflected, refracted and multiple rays. For right graph, draw the corresponding "travel-time curves" for all four arrivals. (total of 4 ray paths and 4 curves) 16%

Q2. Draw the corresponding "apparent slowness-distance (i.e.,  $p_x-x$ ) curve" and "apparent slowness-intercept time (i.e.,  $p_x-\tau$ ) curve". (total of 2 figures) 14%

2. For seismic data processing, your goal is to obtain final stacked section. Please discuss the work flow with: (1) "flow-chart" (流程), 5% (2) provide short discussion to explain each processing steps listed in the flow-chart, 10% (3) Which steps are important? Why? 10% 25%

3. The diagrams (a) and (b) show the effect that isostatic compensation has on gravity anomalies over a schematic mountain range. Figure (a) shows the case for mountains partially (75%) compensated. Figure (b) shows the case for totally non-compensated mountain. Describe in words and draw: What the (1) Bouguer, free air anomalies will look like for a fully compensated mountain range? 10% (2) Use the Airy and Pratt models to show that the isostatic anomalies should be close to zero for isostatic equilibrium. 15%



參考用

注意：背面有試題

國立中央大學103學年度碩士班考試入學試題卷

所別：地球科學系地球物理碩士班 不分組(一般生) 科目：地球物理學 共 2 頁 第 2 頁  
地球科學系地球物理碩士班 不分組(在職生)

本科考試禁用計算器

\*請在試卷答案卷(卡)內作答

4. Answer all three questions.

Describe at least three possible models regarding Taiwan Tectonic Models that you know so far. 10%

What are: (1) the research activities? For example, please describe (at least) **three to five** (at most) types of surveys that you know and being pursuit by scientists in Taiwan. 5%

(2) Please discuss the known study results and evidences (but possibly can be revised or modified later) that being investigated in Taiwan so far? 5%

參考用

注意：背面有試題