

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
DEPARTMENT OF SURVEYING & GEOINFORMATICS

Second Semester, 2018/2019 Examination Course: Applied Geophysics *SVG529*
Instruction: Answer any Three Questions Time: 2 Hours

1. (a) Briefly explain what you understand by Natural and Artificial methods of geophysical surveying.
(b) Explain fully the procedure involved in handling the planning of geophysical surveying under the following headings:
 - (i) Social constraints
 - (ii) Selection of station interval
2. (a) Write short notes on Magnetic and Electrical methods of geophysical surveying.
(b) The concept of gravimetric surveying follows Newton's laws. State these laws and briefly discuss their relationship.
3. (a) When compared to the other geophysical methods, the seismic methods have some advantages and disadvantages. Briefly discuss.
(b) Give separate lists of only the advantages of Seismic Reflection and Refraction methods.
4. (a) Explain the importance of regional and residual gravity anomalies in geodesy.
(b) The gravity value of a point on the surface of the earth is 978123.0254 mgal , the height of the point from the geoid is 1.055 m and its latitude is 45° . Calculate its reduced gravity and gravity anomaly.

[Hints: (i) $\gamma = \gamma_r (1 + 0.0052790414 \sin^2\phi + 0.0000232718 \sin^4\phi)$, (ii) Only Only Bouguer and Free Air corrections are required]