UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

SECOND SEMESTER EXAMINATIONS, MAY 2015

COURSE NO : PE 278
COURSE NAME: **APPLIED GEOPHYSICS**
CLASS : PE II TIME: **3 HOURS**

Name**:** _____Index Number: _____

ATTEMPT ALL QUESTIONS

Question 1

Define or explain the following terms:

a) Geophone
b) Snell's Law
c) Static Geophysical methods
d) Dynamic Geophysical methods
e) Seismogram
f) Instrument drift
g) Cross over distance
h) Magnetic moment
i) Intensity of magnetisation
j) Diurnal variation ***4 marks X 10 = 40 marks***

Question 2

a) What is a Geophysical survey? ***(4 marks)***

b) List for properties of rocks which are utilised in Geophysics ***(4 marks)***

c) Briefly discuss the three main steps involved in a seismic survey ***(6 marks)***

d) Give three advantages of the seismic geophysical methods over the other geophysical methods ***(6 marks)***

Question 3

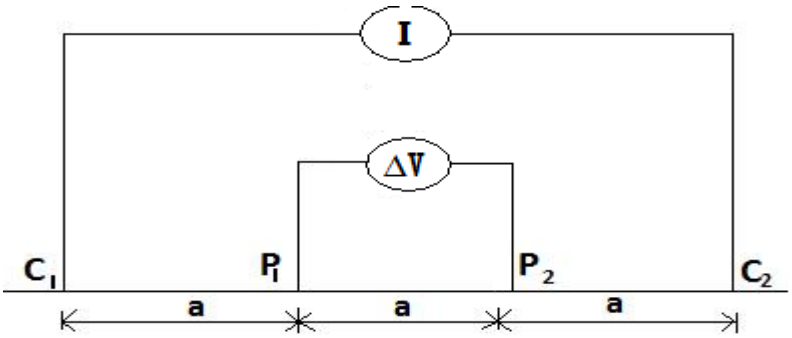
a) Define Coulombs Law of Electric Charges. How is this Law similar and different from Newton's Law of Universal Gravitation. ***(8 marks)***

b) List five corrections that can be made in gravity survey ***(5 marks)***

c) Briefly describe how a gravity survey is carried out ***(7 marks)***

Question 4

a) In the figure shown below, Find an expression for the geometric factor K. ***(10 marks)***



b) Distinguish between Horizontal Electrical profiling (HEP) and Vertical Electrical Sounding (VES) in resistivity measurements. ***(6 marks)***

c) Give the main advantages of the electrical resistivity imaging technique over the conventional four electrode resistivity method. ***(4 marks)***

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