UNIVERSITY OF JOHANNESBURG

FACULTY OF SCIENCE

DEPARTMENT OF GEOLOGY

MODULE CODE	**GLG2B10**
MODULE NAME	**Structural Geology and Plate Tectonics**
CAMPUS	**APK**
EXAM	**December 2014 (Supplementary)**

Date	**December 2014**
Assessor(S)	**Dr HS van Niekerk**
Internal Moderator	**Dr B Smith**
External Moderator	
Duration	**180 minutes**
Marks	**180**

Number of pages	**2 (including front page)**
Instructions	**Answer all the questions**
	In all cases, use well drawn annotated sketches to supplement your explanations and answers.

Section A: Plate Tectonics

1. Discuss subduction zones in terms of all its effects on the crust of the Earth. (30 marks)

2. Discuss continental rifts in terms of plate tectonic processes. (20 marks)

3. Discuss the difference between true and apparent polar wander. (6 marks)

4. Make a sketch of a typical transform fault and name the six different classes of transform faults. (12 marks)

5. Discuss the terms transpression and transtension in terms of plate tectonic processes. (10 marks)

6. Make **TWO** sets of sketches that compare the formation of continental rifts and aulacogens from the extensional to compressional stages. (12 marks)

Section B: Structural Geology

1. Make a series of sketches that indicate **NINE** different types of faults. Be sure to name each of these types of faults. (30 marks)

2. Make **TWO** sketches that explain the formation of Antitaxial and Syntaxial vein formation. (10 marks)

3. Discuss the relationship between Force, Stress, Deformation and Strain. Indicate how these relate to each other in the **FIVE** common strain states. (35 marks)

4. Discuss and use annotated sketches to explain Andersons theory of faulting (15 marks)