UNIVERSITY OF FORT HARE

GLG512
Mineralogy
Igneous and Metamorphic Petrology

Degree Examinations: June 2018

Subject: Geology

Time: 3 Hours

Marks: 100

This paper consists of two pages including the cover page

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INSTRUCTIONS

Answer two questions from each of Sections A and B. Answers that are not clearly numbered will not be marked.
SECTION A

Question One
Discuss the solid-state energy and wavelength dispersive methods of X-ray microanalysis of the chemical composition of minerals. [25]

Question Two
Rocks with exceptionally high alkali and low silica contents occur in many alkaline provinces. Explain the occurrence, characteristics and origin of alkaline lamprophyre, kimberlite and carbonatite. [25]

Question Three
Certain igneous rocks formed only during the Precambrian and at no other time. Write a review of the special Precambrian igneous associations. [25]

SECTION B

Question Four
Discuss X-ray fluorescence analysis as an analytical technique for determining the chemical compositions of minerals and rocks. [25]

Question Five
Describe and explain the occurrence and mode of formation of mineral and rock textures in the shear zones of metamorphic complexes. [25]

Question Six
The processes, and their validity, of granitization, anatexis and migmatization in metamorphic terranes. [25]

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