

UNIVERSITY OF FORT HARE

<p>GLG 322 Metamorphic Petrology Engineering Geology</p>

Supplementary Examinations: Jan/Feb 2019

Time: 3 Hours

Marks: 100

Subject: Geology

One paper

<p>This paper consists of 4 pages including the cover pages</p>

Internal Examiners:

External Examiner:

Mr C.J. Gunter

Dr S Misra

Mr S. Sinuka

INSTRUCTIONS

Answer two (2) questions from each of Section A and B

SECTION A: METAMORPHIC PETROLOGY

QUESTION 1

Write an essay on applications of the Phase Rule in metamorphic petrology, including its applications to natural rocks. [25]

QUESTION 2

Explain, with examples, how metamorphic phase diagrams are constructed and how they are used in metamorphic petrology. [25]

QUESTION 3

- a) Briefly discuss the influence of fluids on metamorphic phase equilibria. [10]
- b) Give an overview and critique of evidence for equilibrium in metamorphism [15]

SECTION B: ENGINEERING GEOLOGY

QUESTION 4

With the aid of diagrams/drawings, illustrate the different topographic zones of a beach, and explain the hydrodynamic conditions of each zone, and the particular topographic features observed in a rock coast. [25]

QUESTION 5

Give an account on the chemical properties of soils, and explain why these properties could affect vegetation and engineering projects. [25]

QUESTION 6

What is a landslide? Write a concise essay on landslide and explain how to prevent and mitigate landslide. [25]

