

**REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF MINERAL RESOURCES
EXAMINATION FOR THE MINE SURVEYORS CERTIFICATE OF COMPETENCY**

DATE: 14 October 2011 (Friday)
TIME: 12:30 to 14:30 (2 Hours)

TOTAL MARKS: **100**
TO PASS: **50**

GEOLOGY

QUESTION 1

“Crystal Form” is a Physical Characteristic of a Mineral. Discuss in detail. (10)

QUESTION 2

The Rock-forming “Femic Minerals Group” comprises a number of families in each of which the members have a close relationship to one another. Name and discuss the different families. (10)

QUESTION 3

Minerals can be classified by their various properties.
Complete the attached tabulation to indicate some of these properties. (20)

QUESTION 4

There are three agents that bring about metamorphism :
4.1 Name the three agents.
4.2 Name and discuss the three types of Metamorphism.
4.3 List two metamorphic rocks. (10)

QUESTION 5

5.1 Explain what is meant by “Denudation of the earth’s crust”.
5.2 Describe fully the agents which are responsible for the Denudation of the earth’s crust considering both the mechanical and the chemical processes. (10)

QUESTION 6

Discuss “Tin” in South Africa with reference to the following :
Uses , properties and location of tin deposits. (10)

QUESTION 7

In regards to the Physical characteristics of a mineral , define or describe the following terms :

7.1 Tenacity

7.2 Brittle

7.3 Flexible

7.4 Fusibility

7.5 Malleable

(10)

QUESTION 8

Plot the second level horizon showing all construction lines of intersection.

Name the type of fault and what effect that it has on the ground (show on plan).

Draw a section along line A – B.

Indicate the following regarding the reef:

a) Apparent movement.

b) Horizontal component of movement showing distance in metres.

c) Vertical component of movement showing distance in metres.

(20)

TOTAL 100