



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

MINE SURVEYOR'S CERTIFICATE OF COMPETENCY EXAMINATION

GEOLOGY

DATE: 05 October 2016

TOTAL MARKS: 100
TO PASS: 50

TIME ALLOWED: 2 HOURS
(12h30 to 14h30)

NOTE:

- This question paper consists of **THREE** pages including cover page.
- All questions must be answered.
- All answers and sketches to be presented in a neat and decipherable manner. Papers will not be marked if not decipherable.
- Restrict the use of highlighters.
- Do not use a red pen.
- Read the instructions on the front page of your answer book carefully.
- No cellular phones shall be allowed in the examination venue.
- The use of computers, laptops and palmtops is prohibited.

QUESTION 1

South Africa is divided into a number of Stratigraphic sub-divisions. The rocks in the Swazian are placed in several sequences and groups.

1.1 Name and briefly discuss the three Swazian Sequences.

1.2 Name the groups in the Swazian.

(10)

QUESTION 2

“Palaeontology” is the study of ancient life, thus deals with fossils. Discuss Palaeontology in detail.

(10)

QUESTION 3

Minerals can be classified by their various properties.

Complete the attached tabulation to indicate some of these properties.

(15)

QUESTION 4

Limestone is a common Sedimentary rock. Discuss under the following headings:

4.1 Formation.

4.2 Composition

4.3 Location in South Africa.

(10)

QUESTION 5

Physical Geology is concerned with the processes and forces that bring about changes in the shape of the earth’s surface. Discuss in detail the different kind of “Lakes” and how they are formed.

(10)

QUESTION 6

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 7

Name five metals of the Platinum Group, their uses, and where they occur in South Africa.

(10)

QUESTION 8

Plot the second level horizon showing all construction lines of intersection.
Draw a section along line A – B.

Indicate the following regarding the reef:

- a) Apparent movement showing distance in metres.
- b) Horizontal component of movement showing distance in meters.
- c) Vertical component of movement showing distance in meters. (20)

QUESTION 9

Name five Geophysical Prospecting Methods. (5)

TOTAL 100

QUESTION 3

05 OCTOBER 2016

EXAM NO.

MINERAL					
Physical Properties	Graphite	Quartz	Cuprite	Halite	Apatite
Crystal System					
Colour					
Lustre					
Hardness					
Density					
Properties Uses					

(15)

