



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

MINE SURVEYOR'S CERTIFICATE OF COMPETENCY EXAMINATION

GEOLOGY

DATE: 03 May 2017

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

Name and describe the difference types of coal. (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. (10)

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. (5)

QUESTION 5

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

QUESTION 6

“Crystal Form” is a Physical Characteristic of a Mineral. Name and discuss six different crystal forms. (10)

QUESTION 7

Discuss “Vermiculite” in South Africa with reference to the following:
7.1 Uses and properties.
7.2 Method of mining.
7.3 Location. (5)

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)

QUESTION 9

Regarding the formation of economic deposits, name five deposits formed by mechanical concentration. Give an example of a mineral associated with each deposit.

(10)

QUESTION 10

Strata are said to be “faulted” when there is relative movement across the plane of fracture. Discuss the different types of faults and the affect that they have on strata.

(10)

TOTAL 100

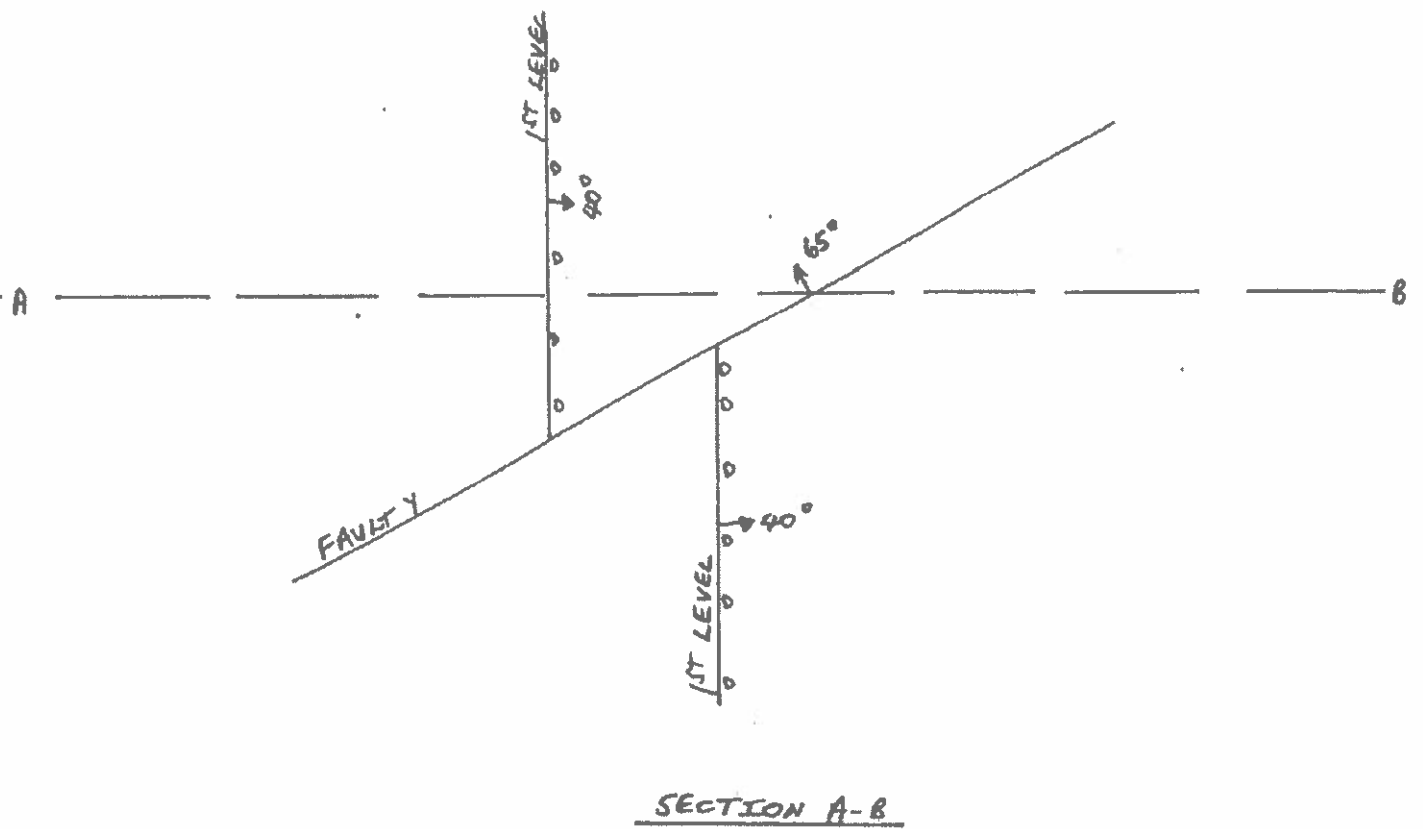
QUESTION 3

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EXAM NO.

MINERAL				
Physical Properties	Calcite	Copper	Cinnabar	Diamond
Colour				
Streak				
Fracture				
Cleavage				
Density				

(10)



1ST LEVEL

2ND LEVEL

