

**REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF MINERALS AND ENERGY
EXAMINATION FOR THE MINE SURVEYORS CERTIFICATE OF COMPETENCY**

DATE: 10 October 2008
TIME: 08h30 to 11h30 (3 Hours)

TOTAL MARKS: 100
TO PASS: 50

SUBJECT: MINING ECONOMICS 1

Note:

This paper tests your understanding of basic mining economics definitions and concepts, rather than your ability to calculate answers to standard problems. Your answers will be marked on their correctness, relevance and content. Provide sufficient material to substantiate your point; three or four sentences per answer will do.

[2 Pages, 6 Questions]

QUESTION 1

Explain in your own words the difference between:

- (a) Mineral resource and mineral reserve;
- (b) Discounting and cutting;
- (c) Regression and bias;
- (d) Value and grade;
- (e) Sample and specimen.

[20 Marks]

QUESTION 2

Describe in your own words, how you would sample:

- (a) An alluvial deposit;
- (b) A massive orebody;
- (c) A rock dump;
- (d) An outcrop.

[20 Marks]

QUESTION 3

Describe in your own words the five different classes of samples, and point out in which situations they would be most appropriately used.

[10 Marks]

QUESTION 4

Discuss at least five advantages of broken ore sampling when compared with chip sampling, in the context of an underground gold mine.

[15 Marks]

QUESTION 5

Discuss, in your own words:

- (a) The purpose of systematic reconciliation of mineral resources and reserves;
- (b) At least five practices where such a reconciliation would provide a good check on.

[20 Marks]

QUESTION 6

With the aid of sketches, describe:

- (a) Histogram, frequency distribution curve and ogive;
- (b) Mode, median and mean in a right skewed frequency distribution curve;
- (c) Scatter diagram and regression line.

[15 Marks]

END OF EXAMINATION PAPER

[Total 100 marks]
