



FACULTY OF ENGINEERING AND ENVIRONMENT
DEPARTMENT OF MINING ENGINEERING
Mineral Economics and Management
EMN 4202
Examination Paper

This examination paper consists of **3** pages

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: Mr. T Dombo

INSTRUCTIONS

1. **Answer all questions in section A and choose any 2 in section B**
2. Each question carries **25** marks.
3. Use of calculators is permissible.

Additional Requirements

Calculator

MARK ALLOCATION

Question 1 to 5	Total 25 marks
Part Questions	As shown in each part question
Total Attainable	100 marks

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Section A

QUESTION 1

Rock Technology mining company has recently accumulated total funds of \$85M by setting aside annual annuity for the past 20 years for an environmental bond associated with expansion of its operations.

(a) What annual annuity did the company have to put for the last 20 years in order to have reached \$85M when applying an interest rate of 5.6% per annum compounded annually.

(5)

(b) What annual annuity is the company able to draw down over the next 25 years of operations to carry out progressive site rehabilitation when applying an interest rate of 4.2% per compound annually.

(5)

Assume that no money is left over at the end of 25 years

(c) Write notes on the following terms:

Cartel

Shareholder equity

Cash flow

Rate of return

Net present value.

Cash flow

Cash outflow. (15)

QUESTION 2

(a) Fully explain the meaning of Gross Domestic Product (GDP), what it reflects and the different ways of its determination. (7)

(b) Describe **economic growth** and **economic development**. How does the Zimbabwean mining industry contribute to the economic growth and development and the achievement of UN sustainable development goals? (9)

(c) The mining sector has various linkages with the rest of the economy. Describe in detail three linkages using examples. (9)

SECTION B

QUESTION 3

- (a) Discuss the factors controlling mineral availability. **(8)**
- (b) Elaborate on mineral resource crisis and how this can be solved. **(7)**
- (c) Explain 5 factors that determine the economics of mining and the returns on the investments. **(10)**

QUESTION 4

- (a) Elaborate on the objectives of feasibility study. **(10)**
- (b) Rock Technology leased 40 hectares of land to a mining company paying an interest of 6% annually per hectare. What is the worth of the land in n years to come assuming the current worth of each hectare is \$ 50 000? **(5)**
- (c) How long will Rock Technology take to gain a value of \$2 382 000? **(5)**
- (d) Discuss the net present value technique for appraising mining investment decisions. **(5)**

QUESTION 5

- (a) ABC company is contemplating of opening a new mining venture. As a mineral economist advise this mining venture how it can source funding for this venture. **(15)**
- (b) Explain on internal risks that ABC mining company might encounter. **(10)**

END OF EXAMINATION