FACULTY OF ENGINEERING AND THE ENVIRONMENT

DEPARTMENT OF MINING ENGINEERING

EMN 4202 – MINERAL ECONOMICS AND MANAGEMENT
Examination Paper June 2025

Time Allowed: **3 hours**
Total Marks: **100**

Examiner's Name: **MANESWA G**

Additional Requirements

- Calculator

INSTRUCTIONS:
1. This paper contains **TWO** sections
2. Answer all questions in Section **A** and any **3** questions in Section **B**.
3. Show all your working for full credit.
4. Start each question on a new page.

This examination paper consists of **3** pages

Section A [40 marks]
Answer all questions

Question One

a) Explain the concept of elasticity. How does it apply to the mining sector? [**4 marks**]
b) Discuss the components of a feasibility study for a mining project. Why is each component essential? [**10 marks**]
c) Explain the importance of market conditions in the valuation of mineral resources. [**3 marks**]
d) State any three implications of resource depletion on the long-term viability of a mining operation.[**3 marks**]
e) Explain the meaning of Gross Domestic Product (GDP), what it reflects and the different ways of its determination [**6 marks**]
f) A mine produces 100,000 tons of ore annually. The fixed costs are $0.6 million per year and the variable cost per ton is $12.5. If the selling price per ton is $25, calculate:

i) The break-even point in tons. [**4 marks**]

ii) The profit or loss if the mine sells 90,000 tons in a year [**4 marks].**

g) A mining company has total revenue of 70 million and total expenses of 55 million. If the company pays interest of 5 million and taxes of 2 million, calculate:

i) Net Profit Margin [**3 marks**]

ii) Operating Profit Margin [**3 marks**]

Section B [60 marks]
Answer any 3 Questions

Question Two

a) What are the main regulatory bodies governing mining activities in Zimbabwe? Briefly describe their roles. [**6 marks**}
b) Discuss the significance of the mining sector to Zimbabwe's economy. Include an analysis of key minerals and their contributions to GDP. [**14 marks**]

Question Three

a) Evaluate the mineral value chain for platinum in Zimbabwe. Discuss the processes involved from extraction to market and the economic implications of each stage **[8 marks]**
b) Analyze the economic challenges faced by the mining sector in Zimbabwe, including issues such as investment climate, infrastructure, and policy uncertainty. [**12 marks**]

Question Four

Explain the importance of sustainable mining practices in Zimbabwe. How can these practices benefit local communities? [**20 marks**]

Question Five

a) A mining company has the following projected cash flows from a new project:
   - Year 0: -$8,000,000
   - Year 1: $2,500,000
   - Year 2: $3,500,000
   - Year 3: $4,500,000
   - Year 4: $5,000,000

Calculate the Net Present Value (NPV) of the project if the discount rate is 12%. [**10 marks**]

b) A mining company reports the following financial data:
   - Revenue: $30 million
   - Cost of Goods Sold (COGS): $20 million
   - Operating Expenses: $5 million
   - Total Assets: $40 million
   - Total Liabilities: $25 million

   Calculate:
   i. Gross Profit Margin [**5 marks**]
   ii. Return on Assets (ROA) [**5 marks**]