BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE

DEPARTMENT: NATURAL RESOURCES

PROGRAMME: BSc NATURAL RESOURCES MANAGEMENT

COURSE CODE (1): NRM203: MINERAL RESOURCES MANAGEMENT

DURATION: 2 HOURS   **TOTAL MARKS: 70**

JUN 2024

INSTRUCTIONS TO CANDIDATES

Answer *Three* questions out of the following five questions. You must answer question *One* from Section A and any *Two* questions from Section B.

SECTION A (COMPULSORY)

1. (a) Outline the seven steps involved in obtaining mineral commodities.   [14 Marks]

   (b) (i) Define ore grade and gangue.   [4 Marks]

   (ii) If a 60 m³ Nickel ore body has a density of 16 g cm⁻³ and an ore grade of 8 ppm.

   Calculate the mass of Nickel in the ore body.

   [mass of the commodity=volume of ore body x density of ore body x grade].   [3 Marks]

   (c) Describe any THREE types of mineral rights obtainable in Zimbabwe according

   to the Mines and Minerals's ACT (1961): [Chapter 21:05].   [9 Marks]

SECTION B

2. Discuss four advantages of mineral beneficiation in Zimbabwe.   [20 marks]

3. (a) State the formula for estimating revenue accrued from a mining project. [4 Marks]

(b) Calculate the net present value of a mining project ($US) based on the annual benefits and costs information given in the following table.

Assume a discount ratio of 5%.

Year	Benefits	costs
1	0	45
2	150	50
3	250	25
4	300	40
5	1000	250

[16 Marks]

4. Discuss the legislative framework guiding the extraction of minerals in Zimbabwe. [20 Marks]

5. Discuss the marketing framework of minerals in Zimbabwe. [20 Marks]

END OF PAPER