



HEBERT CHITEPO SHOOLOF LAW AND BUSINESS SCIENCES

DEPARTMENT OF ECONOMICS AND FINANCE

MASTRR OF COMMERCE DEGREE

LEVEL 1

SEMESTER 2

MODULE CODE

MED527

MODULE NARRATION

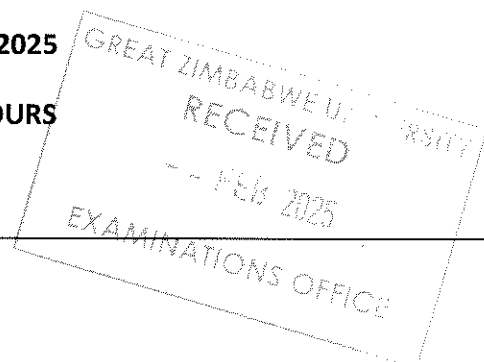
**NATURAL RESOURCES AND ECONOMIC
DEVELOPMENT**

DATE

FEB 2025

DURATION

3 HOURS



INSTRUCTIONS TO CANDIDATES:

1. Answer any four questions
2. All questions carry equal marks
3. Start each answer on a fresh page
4. Show all workings, where applicable

QUESTION 1

- (a) Describe the major characteristics of non-renewable resources. [4 marks]
- (b) Discuss the critical issues in the optimal utilization of non-renewable resources.

[21 marks]

[Total 25 marks]

QUESTION 2

- (a) Discuss with illustrations the link between natural resources and economic development. [15 marks]
- (b) Using appropriate examples, examine how natural resources are classified. [10 marks]

[Total 25 marks]

QUESTION 3

Evaluate the resource curse thesis using the DRC and the USA.

[Total 25 marks]

QUESTION 4

Suppose the relevant details of a non-renewable copper are as follows:

$X_0 = 10$ tonnes: extractive quantity or initial reserves.

$Q_t = q_0, q_1$: quantity extracted in periods 0 and 1 respectively.

$P_t = 20 - q_t$: demand for copper output in period t .

$MC = \$5$ per tonne: constant marginal cost of extraction.

$r = 0.10$: discount rate.

$t = 0, 1$: set of time period periods for extracting coal; assumed to be two periods.

$X_T = X_2 = 0$: final function.

- (a) Explain the net social benefit from extracting coal and then set up the maximizing problem for periods 0 and 1. State the Lagrangean function and obtain the first order necessary condition for this problem. [10 marks]
- (b) Solve for the optimal values of q_0, q_1, P_0 , and P_1 as well as the royalties in periods 0 and 1. [6 marks]
- (c) From the optimal values in (b) above, demonstrate that a condition for optimal depletion, in this case, is that the present value of the royalty must be the same in both periods 0 and 1. [5 marks]
- (d) From the results above, demonstrate that another condition for optimal depletion is that the price of coal is equal to the marginal cost of extraction plus royalty.

[4 marks]

[Total 25 marks]

QUESTION 5

- 1. Critically examine Zimbabwe's and Botswana's historical experiences of the role of natural resources in economic development. [Total 25 marks]