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FACULTY	Faculty of Agriculture, Engineering & Natural Sciences		
DEPARTMENT	Geosciences		
SUBJECT	Ore body modelling and evaluation		
SUBJECT CODE	GLA5931		
PAPER	1: combined theory & practical		
DATE	June 2022		
DURATION	180 min (3 hours)	MARKS	100

SUPPLEMENTARY EXAMINATION

Examiner: Dr C. I. Uahengo & Dr. A. Vatuva

Internal Moderator: Mr. M. Tshiningayamwe

External Moderator: Prof D Zhang

This question paper consists of 4 pages (including this one)

Instructions
- Closed book examination
- Answer all questions.
- Answer each question on a new page
- Recommendation: read first all subordinate questions before you answer.

UNIVERSITY OF NAMIBIA EXAMINATIONS

1. Write short notes on the following:

a) Variography (3)

b) Outlier recognition and treatment of outliers (3)

c) Break-Even Cut-off Grade: (3)

d) Project Risk Assessment (3)

2. How can one combine 3D geological modelling techniques to address variations in geology, data type and density? (20)

3. Discuss why a poor sampling program can affect the viability of a prospect. (8)

4. Discuss the concept of conditional simulations and loss functions in an exploration project. (20)

5. A mining company purchased a coal mine on Jan 1 20X5 for $2,800,000. The estimated capacity of the mine is 1,750,000 tons of coal and the estimated salvage value is zero. The company incurred additional $50,000 on development of mine for extraction purposes. They had extracted 210,000 tons of coal from the mine up to Jan 31, 20X5 and sold all but 13,000 tons of the coal extracted from the mine, with in Jan 20X5. Compute the depletion expense on the mine for the month ending Jan 31, 20X5. (20)

$$\text{Depletion Expense} = \frac{\text{Cost} - \text{Salvage Value}}{\text{Estimated Number of Units}} \times \text{Number of Units Extracted}$$

6. Describe the decision making process that determines whether a mining deposit will be mined and if so, by underground or open pit methods. (20)

END OF EXAMINATION