



PROGRAM : NATIONAL DIPLOMA
(MINING ENGINEERING)

SUBJECT : MINING III

CODE : MIN 32-1

DATE : FINAL EXAMINATION
11th NOVEMBER 2019

DURATION : 3 HOURS (08H30 - 11H30)

TOTAL MARKS : 100

WEIGHTING : 60% OF FINAL MARK

EXAMINERS : T MMOLA & N NDIWENI

MODERATOR : S NHLEKO

NUMBER OF PAGES : 2 PAGES excl. COVER PAGE

INSTRUCTIONS

1. ANSWER ALL QUESTIONS
 2. UNDERLINE AFTER EACH QUESTION
 2. COMPLETE SECTIONS A AND B IN DIFFERENT SCRIPTS
 5. NO CELLPHONES (SWITCH-OFF)
 6. DO NOT USE TIPPEX.
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REQUIREMENTS

1. MINIMUM TWO SCRIPTS
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SECTION A
METALLIFEROUS AND GENERIC MINING

QUESTION 1

- 1.1 Room-and-pillar mining and Sublevel stoping are two open stope mining methods. State and elucidate on the primary factor that would determine which method to select if the rock and ore strength indicate that an open stoping mining method may be applied. (5)
- 1.2 Name three variations of room-and-pillar mining? (3)
- 1.3 What has led to sublevel stoping becoming a highly efficient and versatile mining method? (3)
- 1.4 Give a brief description of the drift-and-fill mining method. (5)
- 1.5 State the limitations to applying the cut-and-fill mining method. (4)

[20]

QUESTION 2

- 2.1 Discuss the phases of stoping in conventional breast mining. (20)
- 2.2 What is the purpose of a gully? Name the types of gullies found in narrow tabular mines. (5)
- 2.3 Discuss the rock handling operations using a scraper system in conventional production stoping. (5)

[30]

QUESTION 3

- 3.1 Describe briefly the sublevel caving method (6)
- 3.2 State three advantages and three disadvantages of sublevel caving (6)
- 3.3 What is the purpose of the undercut level in a block cave operation? (2)
- 3.4 Describe the contemporary undercutting strategies that can be employed to initiate a block cave (6)

[20]

TOTAL SECTION A

[70]

SECTION B
COAL MINING

QUESTION 1

- 1.1 By use of a diagram illustrate the Nevid method in pillar extraction. (10)
- 1.2 By use of a diagram show an illustration on the cutting dimensions of a Nevid pillar extraction method. (10)
- [20]**
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QUESTION 2

- 2.1 What are the suitable mining features for CM usage in bord & pillar mining? (4)
- 2.2 Write notes on detection and extinguishing of heat in spontaneous combustion situations underground. (6)
- [10]**
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SUB - TOTAL SECTION B	[30]
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TOTAL	[100]
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