



PROGRAM : BACHELOR OF ENGINEERING TECHNOLOGY
(MINING ENGINEERING)

SUBJECT : MINING METAL 2A

CODE : MMEMNA2

DATE : 25 MAY 2019
FINAL EXAMINATION

DURATION : 3 HOURS (08H30 - 11H30)

TOTAL MARKS : 100

EXAMINERS : T MMOLA

MODERATOR : S NHLEKO

NUMBER OF PAGES : 3 PAGES incl. COVER PAGE

REQUIREMENTS

1. ONE ANSWER SCRIPT

INSTRUCTIONS

1. ANSWER ALL QUESTIONS
 2. UNDERLINE AFTER EACH QUESTION
 3. SUBMIT QUESTION PAPER WITH ANSWER SCRIPT
-

QUESTION 1

- 1.1 Explain what is an open stope. (6)
- 1.2 Discuss briefly the following mining strategies:
- (a) Stope and retreat (4)
 - (b) Stope and fill (4)
 - (c) Underhand stoping (2)
 - (d) Overhand stoping (2)
- 1.3 Give a brief description of the following variations of room-and-pillar (R&P) mining and state under which conditions each variation would be applied.
- (a) Classic R&P (4)
 - (b) Step R&P (4)
 - (c) Post R&P (4)

[30]

QUESTION 2

- 2.1 What are the reasons for backfilling mined openings? (5)
- 2.2 Name the various forms of backfill. (4)
- 2.3 Give a brief description of the Drift-and-Fill mining method and (5)
- 2.4 Indicate the type of conditions in which Drift-and-fill can generally be applied. (6)

[20]

QUESTION 3

- 3.1 Describe the sequential grid mining method as applied in a conventional gold mine. (6)
- 3.2 State the limitations of longwall mining. (4)
- 3.3 What is the purpose of a gully? Name the types of gullies found in narrow tabular mines. (5)

- 3.4 Explain how broken rock is handled from an underground stope to the surface in a conventional narrow tabular mine using a scraper system and trackbound transportation. (15)
- [30]**
-

QUESTION 4

- 4.1 Describe briefly the sublevel caving method (4)
- 4.2 State three advantages and three disadvantages of sublevel caving (6)
- 4.3 What is the purpose of the undercut level in a block cave operation? (2)
- 4.4 Describe the contemporary undercutting strategies that can be employed to initiate a block cave (6)
- [20]**

TOTAL

[100]
