



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

SECOND SEMESTER EXAMINATIONS, MAY 2018

COURSE NO: MN 372
COURSE NAME: UNDERGROUND MINING SYSTEMS
CLASS: MN III **TIME:** 2½ HOURS

Name: _____ Index Number: _____

INSTRUCTIONS: ANSWER ANY THREE (3) QUESTIONS

1. (a) Differentiate between Foot wall and Hanging wall in Underground Mining. **(3marks)**
(b) What are the advantages and disadvantages of Room and Pillar Method of Mining?
(7 marks)
(c) With the aid of a well labelled diagrams, discuss the Development, Area of applications, Ore removal and support Systems for Room and Pillar system of underground mining.
(10 marks)
2. (a) Define level, Sub-Level, a raise and a winze as they relate to Underground Mining Operations. **(4 marks)**
(b) Compare and Contrast Overhang and Underhang stoping as they relate to Underground Mining system. **(6 marks)**
(c) With the aid of well labelled diagrams describe Longwall method of mining. **(10 marks)**
3. (a) Define finger raise, chute and grizzly as they relate to Underground Mining. **(3 marks)**
(b) Differentiate between naturally supported Stopes and artificially supported stopes **(7mks)**
(b) Discuss Block caving underground mining system with emphasize on Development, Area of applications, Drilling and Blasting, Caving action, Ore Removal, advantages and disadvantages. Illustrate with diagrams. **(10 marks)**
4. (a) What is subsidence? How can it be prevented or minimized in Underground Mining?
(4 marks)
(b) Discuss Non-Pillar Support System in Underground Mining. **(8 marks)**
(c) What are the technical data required for underground Mine planning? **(8 marks)**
5. (a) What are the differences between Sub-Level Caving and other Caving Methods **(3mks)?**
(b) What are the prospects and challenges associated with sub-level stoping and vertical Crater Retreat Underground Mining Methods? **(7 marks)**
(c) With the aid of well labelled diagrams, discuss the Development, Area of applications, Drilling and Blasting, and Ore removal in Sub-Level Caving. **(10 marks)**

Examiners: Prof Opafunso/