UNIVERSITY OF JOHANNESBURG

PROGRAM	:	BTech *MINING ENGINEERING*
SUBJECT	:	**MINING PROJECTS** **Supplement Exam**
DATE	:	SUMMER SSA EXAMINATION 2017 10 JANUARY 2017
DURATION	:	(SESSION 3) 15:00 - 18:00
DURATION and TIME	:	
~~**WEIGHT**~~	:	~~50:50~~
TOTAL MARKS	:	100

EXAMINER	:	Mr T Mmola & Dr. Steven Rupprecht
MODERATOR	:	Mr H Hoffman
NUMBER OF PAGES	:	

INSTRUCTIONS

1. READ ALL QUESTIONS CAREFULLY AND ANSWER ALL THE QUESTIONS.
2. COMPLETE SECTIONS A AND B IN SEPARATE EXAMINATION SCRIPTS.

REQUIREMENTS : TWO EXAMINATION SCRIPTS PER STUDENT.

SECTION A: PROJECT MANAGEMENT

QUESTION 1

The table below shows eleven activities that have to be done to complete a mining project. Immediate predecessor relationships are shown together with the activity time in weeks. Note that the project is finished when both activity "J" and "K" are completed. Find:

1.1 The network. (10)

1.2 All expected activity times, variances, and slacks. **Tabulate.** (33)

1.3 The critical path and expected completion time. (4)

1.4 The probability the project will be done within 2 weeks of the calculated critical path finish time. (3)

Activity	Duration (weeks)			Predecessors
	Optimistic	Most Likely	Pessimistic	
A	4	5	6	none
B	1	2	9	none
C	6	7	8	A
D	4	6	8	A
E	4	7	10	B
F	5	6	7	B
G	1	3	5	D,E
H	7	10	13	D,E
I	7	8	9	C,G
J	3	5	7	F
K	1	2	9	H,I,J

[50]

SUB-TOTAL: SECTION A **[75]**

SECTION B: TO BE DONE IN SEPARATE SCRIPT

QUESTION 1

You have been given a Mineral Resource of 9,876,000 tonnes at a Grade 14g/t.
The Manager provide you with the following detail.
The crown pillar accounts for 3% of mining loss; the extraction rate is 75%.
Dilution is estimated at 15% at 0g/t

The manager wants to know:

- The mining loss in tonnes
- The dilution in tonnes
- The Mineral Reserve tonnes and grade

(20 pts)

QUESTION 2

Provide a detailed Table of Contents for a Scoping Study or Prefeasibility Study

(10 pts)

QUESTION 3

Provide a definition for **Scoping Study** and **a Prefeasibility Study** and explain how they are used in making strategic decisions in the mining method

(20 pts)

SUB-TOTAL SECTION B (50 pts

TOTAL = 100

INFORMATION SHEET (IF APPLICABLE)

FORUMULA SHEET

$Te = (a + 4m + b)/6$

$$\sigma^2 = \left(\frac{b - a}{6}\right)^2$$

$$\sigma = \sqrt{\sigma^2}$$

$$Z = (D - \mu)/\sqrt{\sigma_\mu^2}$$

$$Slope = \frac{crash\ cost\ (C_c) - normal\ cost\ (C_n)}{crash\ time (t_c) - normal\ time\ (t_n)}$$