



UNIVERSITY
OF
JOHANNESBURG

PROGRAM : BTECH
(MINING ENGINEERING)

SUBJECT : **MINING PROJECTS**

CODE : **MPT 42-1**

DATE : 07 JANUARY 2020
SUPPLEMENTARY EXAMINATION

DURATION : 3 HOURS (15H00– 18H00)

TOTAL MARKS : 100

EXAMINERS : T MMOLA & S RUPPRECHT

MODERATOR : S NHLEKO

NUMBER OF PAGES : 3 PAGES incl. COVER PAGE

INSTRUCTIONS

1. NO CELLPHONES (SWITCH-OFF)
 2. DO NOT USE TIPPEX.
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REQUIREMENTS

1. ONE SCIENTIFIC CALCULATOR
 2. FORMULA SHEET PROVIDED
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PROJECT MANAGEMENT

QUESTION 1

- 1.1 What is a program and what is program management? (3)
- 1.2 A project's success is directly influence by active stakeholder involvement in the discovery and decomposition of needs into *requirements* and by the care taken in determining, documenting and managing the *requirements* of the product, service, or result of the project. How may these requirements be collected? (5)
- 1.3 Provide a Project Charter Template (12)
- 1.4 Name and explain the types of project information a work package may contain. (10)

[30]

QUESTION 2

Consider the following project (time given in days). (4)

Activity	Optimistic Time	Most Likely Time	Pessimistic Time	Predecessors
a	1	4	7	-
b	2	2	2	-
c	2	5	8	a
d	3	4	5	a
e	4	6	8	c, b
f	0	0	6	c, b
g	3	6	9	d, e

Find:

- 2.1 The network. (9)
- 2.2 All expected activity times, variances, and slacks. Tabulate. (21)
- 2.3 The critical path and expected completion time. (4)
- 2.4 The probability the project will be done in 23 days. (3)
- 2.5 The completion time corresponding to 95% probability. (3)

[40]

QUESTION 3

Given the following project (all times in days): (10)

Activity	Predecessor	Normal Time	Normal Cost	Crash Time	Crash Cost
A	-	5	50	3	150
B	-	4	40	2	200
C	B	7	70	6	160
D	A,C	2	20	1	50
E	A,C	3	30	-	-
F	B	8	80	5	290
G	D	5	50	4	100
H	E,F	6	60	3	180

- 3.1 Draw the network and find the critical path, time, and cost for an all-normal level of project activity. Calculate the crash cost-per-day (all activities may be partially crashed). (20)
- 3.2 Find the optimal way of getting an 18-day delivery time. What is the project cost? (5)
- 3.3 Find the optimal way of getting a 16-day delivery time. What is the project cost? (5)

[30]

TOTAL: **[100]**
