FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

2018 JUNE EXAMINATION

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

PROGRAMME:	NATIONAL DIPLOMA
MODULE	ORGANISATIONAL EFFECTIVENESS 2A
CODE	ORE22A2/OEF22A2
DATE	30 MAY 2018
DURATION	3 HOURS
TIME	08H30 – 15H30
TOTAL MARKS	100

EXAMINER	Mr. M MOLEFE
INTERNAL MODERATOR	Ms. M Silase
NUMBER OF PAGES	5 PAGES

INSTRUCTIONS TO CANDIDATES:

- There are two section.
- There are four question asked
- Question papers must be handed in.
- This is a closed book assessment.
- Read the questions carefully and answer only what is asked.
- Number your answers clearly.
- Write neatly and legibly.
- Structure your answers by using appropriate headings and sub-headings.
- Round of all digits to 2 decimal spaces, unless instructed otherwise.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

SECTION A

QUESTION 1

1.1.	Define the term work study	(1)
1.2.	List any eight {8} skills acquired by MS practitioners	(8)
1.3.	Discuss any four exploring tools	(4)
1.4.	Debate five {5} understandings concerning productivity.	(10)
		[23]

QUESTION 2

	Department 1	Department 2	Department 3
OUTPUT:	1550 Bricks @R360 each	1950 Bricks @R410 each	1600 Bricks @R360 each
INPUT: Manpower	4 man hours @R13 6 man hours @R14	4 man hours @R15 6 man hours @R10	5 man hours @R11 5 man hours @R9
Machinery Material	25 machine hours @R19 23 litres @R45 1200 Km @R35	30 machine hours @R23 25 litres @R55 1200 Km @R35	26 machine hours @R18 25 litres @R55 1250 Km @R40

Use the table provided to calculate productivity for department 3, using department 1 cost values for department number 2. The acquired information will be used as a cost productivity forecast to develop department 4.

2.1. SRP and PI of SRP		(15)
2.2. TRP and PI of SRP		(11)
		[26]

Section B
QUESTION 3

Case Study:

Southwestern University Stadium Construction

After six months of study, much political arm wrestling, and some serious financial analysis, Dr. Martin Starr, president of Southwestern University, had reached a decision. To the delight of its students, and to the disappointment of its athletic boosters, SWU would not be relocating to a new football site but would expand the capacity at its on-campus stadium. Adding 21,000 seats, including dozens of luxury skyboxes, would not please everyone. The influential football coach, Billy Bob Taylor, had long argued the need for a first- class stadium, one with built-in dormitory rooms for his players and a palatial office appropriate for the coach of a future NCAA champion team. But the decision was made, and everyone, including the coach, would learn to live with it. The job now was to get construction going immediately after the current season ended. This would allow exactly 270 days until the upcoming season opening game. The contractor, Hill construction (Bill Hill being an alumnus, of course), signed the contract. Bob Hill looked at the tasks his engineers has outlined and looked President Starr in the eye. "I guarantee the team will be able to take the field on schedule next year," he said with a sense of confidence. "I sure hope so," replied Starr. "The contract penalty of $10,000 per day for running late is nothing compared to what Coach Bill Bob Taylor will do to you if our opening game with Penn State is delayed or cancelled." Hill, sweating slightly, did not respond. In football-crazy Texas, Hill Construction would be mud if the 270-day target were missed. Back in his office, Hill again reviewed the data.He then gathered his foremen. "People, if we're not 75% sure we'll finish this stadium in less than 270 days, I want this project completed, I want to be *early*, not just on time!"

TIME ESTIMATES (DAYS)

ACTIVITY	DESCRIPTION	PREDECESSORS	Duration
A	Bonding, insurance, tax structuring	—	30
B	Foundation, concrete footings for boxes	A	60
C	Upgrading skyboxes, stadium seating	A	65
D	Upgrading walkways, stairwells, elevators	C	55
E	Interior wiring, lathes	B	30
F	Inspection approvals	E	1
G	Plumbing	D, E	30
H	Painting	G	20
I	Hardware/air conditioning/ metal workings	H	30
J	Tile/carpeting/ windows	H	10
K	Inspection	J	1
L	Final detail work/ clean-up	I, K	30

Answer the below Questions using the provided case study:

3.1. Develop a Gannt chart for the project   (8)
3.2. Develop a network drawing for hill construction   (5)
3.3. Determine the EF, ES, LS, LF, SLACK and critical path   (36)
3.4. Which elements are on the critical path?   (2)

[51]
Total Marks [100]

TABLE 1:*SRP*	Name:..Student #............................Sign...................	
Output		
Input		
Labour	.... /......... =	.... /......... =
	._____.	._____.
	.... /......... =	.... /......... =
	._____.	._____.
	.... /......... =	.... /......... =
	._____.	._____.
Machinery	.... /......... =	.... /......... =
	._____.	._____.
	.... /......... =	.... /......... =
	._____.	._____.

Material		
	…………………… /……… =	…………………… /……… =
	._____.	._____.
	…………………… /……… =	…………………… /……… =
	._____.	._____.
	…………………… /……… =	…………………… /……… =
	._____.	._____.

TABLE 2:	Name:………………………………….Student …………………………Sign…………
	PI of SRP
Input	
Labour	…………………………… /……………………* _100_ =
	._____.
	…………………………… /……………………* _100_ =
	._____.
	…………………………… /……………………* _100_ =
	._____.
	…………………………… /……………………* _100_ =
	._____.

Machinery	
	.... / .... * _100_ =
	._____.
	.... / .... * _100_ =
	._____.

Material	
	.... / .... * _100_ =
	._____.
	.... / .... * _100_ =
	._____.
	.... / .... * _100_ =
	._____.
	.... / .... * _100_ =
	._____.

	TRP	
OUTPUT		
INPUT		
Manpower	.... * .... = ...	.... * .... = ...
	.... * .... = ...	.... * .... = ...
	.... * .... = ...	.... * .... = ...
Machinery	.... * .... = ...	.... * .... = ...
	.... * .... = ...	.... * .... = ...
Material	.... * .... = ...	.... * .... = ...
	.... * .... = ...	.... * .... = ...
	.... * .... = ...	.... * .... = ...
TOTALS	*TOTAL* = ...	*TOTAL* =................
	.... / .... = ...	.... / .... = ...
	PI of TRP	
	.... / .... * _100_ =....................	