



FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

MAIN EXAMINATION 2019

DEPARTMENT	DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT
<u>PROGRAMME</u>	ND MANAGEMENT SERVICES ND OPERATIONS MANAGEMENT
<u>MODULE</u>	ORGANISATIONAL EFFECTIVENESS 2A
<u>CODE</u>	ORE22A2
<u>DATE</u>	23 MAY 2017
<u>DURATION</u>	3 HOURS
<u>TOTAL MARKS</u>	100

<u>EXAMINER</u>	MR. M MOLEFE
<u>MODERATOR</u>	MS. J MHLANGA
<u>NUMBER OF PAGES</u>	5 PAGES

INSTRUCTIONS TO CANDIDATES:

- Please answer all questions.
- Calculators are allowed
- Question papers must not 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.
- The general University of Johannesburg policies, procedures and rules pertaining to written exam apply.

...Cont/

QUESTION 1**1.1. Describe the following terms**

- 1.1.1. Process (2)
 - 1.1.2. Procedure (2)
 - 1.1.3. Single Specialism (2)
 - 1.1.4. Totally integrated (2)
 - 1.1.5. Effectiveness (2)
- 1.2. Illustrate a diagram of a system and further provides at least 3 examples of each function within the Illustration (5)

[15]**QUESTION 2****2. Read the case study and answer the Questions that follow on the sheets provided.**

The Egg-White company buys six-week old chickens, slaughters, cleans, weighs, labels and packs the products. They delivered 22 000 packed chickens in the year 2018 and 23000 in 2017 to various consumer retail outlets in the Gauteng Province. The farm earned an average of R30 per packed chicken in 2018 and R35 per packed chicken in 2017. The abattoir is in an industrial building of 800 square meters and the process is largely merchandised. Labour is still used to handle live chickens in the beginning of the process, at some stages during the process and for the packing and cold storage at the end of the process.

The company maintains an 8-hour work day when in production and six days per week for an average of four weeks per month.

You are required to calculate cost productivity the year 2018, by substituting cost values of 2017 into 2018.

Year 2018

Supervisors:	135 @ R45
Inspectors:	132 @ R50
Machine:	120 @ R50

Material input

Plastic wrapping:	60 @ R10
Labels and printing material:	1.5 kg @ R60
Packing crates:	300 @ R8

Year 2017

Supervisors:	140 @ R45
Inspectors:	130 @ R55
Machine:	125 @ R45

Material input

Plastic wrapping:	65 @ R10
Labels and printing material:	1.5 kg @ R55
Packing crates:	300 @ R9

2.1. SRP	(12)
2.2. PI OF SRP	(6)
2.3. TRP	(6)
2.4. PI OF TRP	(2)
	[26]

QUESTION 3

	ACTIVITY	Frequency	%	CUMULATED %
A	Incompetency of workers	46		
B	Absenteeism	35		
C	Delay in packaging	25		
D	Weak administration of information	20		
E	Delay of material	16		
F	Unpleasant working environment	16		
G	Defective material	12		
H	Machine breakdown	10		
I	Incompetency of supervisors	5		
J	Shortage of maintenance parts	4		
		189		

Complete the table provided (**REDRAW**) above to calculate frequency percentages and cumulated percentages.

- 2.1. Draw Pareto chart in your answer sheet to demonstrate the 80/20 rule. (13)
- 2.2. Which activities are the 20% that is causing 80% of the total problems? (2)

[15]

SECTION B
QUESTION 3

ACTIVITIES	PREDECESSORS	TIME
A	-	1 month
B	A	2days
C	-	30hours
D	A,C	1week
E	A	12 hours
F	E	3weeks
G	B,F	2week
H	D,F	1 week
I	G,H	6 hours

SCALE: 1month = 4 weeks, 1 week = 5 days and 1 day = 8hours

3.1. Draw a Gantt chart to show the relationship of activities (10)

3.2. which Activities will be completed after 1 week (2)

3.3. What is the estimated time of completion? (2)

[14]

Question 5

(ANSWER ON THE SHEET PROVIDED).

The activities described by the following table are given for the Howard Corporation in Kansas:

<u>Activity</u>	<u>Predecessor</u>	<u>Duration</u>
A	-	9
B	A	7
C	A	3
D	B	6

E	B	9
F	C	4
G	E,F	6
H	D	5
I	G,H	3

5.1. Calculate the ES, EF, LS, LF and slack variables

(ANSWER ON THE SHEET PROVIDED). (27)

5.2. which element are on the critical path (2)

5.3. what is the duration of the project (1)

[100]

Student No: _____

	2017	2018	PI
OUTPUT			
SUPERVISOR			
INSPECTOR			
MACHINE			
PLASTIC			
LABLELS			
PACKING			

QUESTION 5**STUDENT NO:** _____

<u>ACTIVITY</u>	<u>ES</u>	<u>EF</u>	<u>LS</u>	<u>LF</u>	<u>SLACK</u>
A					
B					
C					
D					
E					
F					
G					
H					
I					