higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

PRODUCTION AND QUALITY CONTROL N5

(8140055)

23 November 2022 (X-paper)
09:00–12:00

This question paper consists of 5 pages.

166Q1E2223

Copyright reserved

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
PRODUCTION AND QUALITY CONTROL N5
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Start each section on a new page.
5. Use only a blue or black pen.
6. Write neatly and legibly.

Copyright reserved

SECTION A: CAPACITY MANAGEMENT/ CAPACITY CONTROL

QUESTION 1

1.1 Define the term *capacity*. (2)

1.2 Explain the difference between *design capacity* and *effective capacity*. (4)

1.3 Write down the formula to calculate utilisation. (3)

1.4 Name any FOUR examples of variable costs. (4)

1.5 Given the following values:

Income per unit of sales : R30
Cost per unit production : R10
Fixed cost per year: : R14 000

How many units have to be produced and sold to break even? (4)

1.6 Describe SIX objectives of a rough-cut capacity plan. (6)

1.7 The table below shows the sales forecast that a particular machine has to meet over five months.

Copy the table in the answer book and complete the production plan (in units) and load (in hours) for this machine based on a waste factor of 7% and load profile of 8 units per hour.

Months	Jan	Feb	March	April	May
Sales Forecast (units)	4500	4700	5200	5500	6500
Production Plan (units)					
Load (hours)					

(10)
[33]

SECTION B: SHOP FLOOR MANAGEMENT/PRODUCTION ACTIVITY CONTROL

QUESTION 2

2.1 Draw a labelled diagram of change point analysis. (6)

2.2 Define or explain the term *six sigma*. (2)

2.3 Determine the weekly variance and cumulative variance from the table below:

Note: Copy and complete the table.

Weeks	1	2	3	4	5
Actual Input	250	280	290	320	350
Actual Output	240	281	285	325	340
Weekly Variance					
Cumulative Variance (or WIP)					

(10)

2.4 Name FIVE objectives of production activity control. (5)

2.5 Describe FOUR elements of total quality management. (4)

2.6 Describe the difference between the *rope* and the *buffer*. (2 × 2) (4)

[31]

SECTION C: INVENTORY MANAGEMENT

QUESTION 3

3.1 Name SEVEN responsibilities of the purchasing department. (7)

3.2 Give THREE types of inventory carrying costs. (3)

3.3 Calculate the most economic order quantity if the:

V = Consumption in units per annum is 2500
B = Order cost is R50
P = Percentage of average inventory value of inventory carrying cost is 25%
K = The cost per unit of inventory is R2,50 (3)

Copyright reserved

3.4 Assume the company experiences the following stock movement over five days:

Day 1: Receipt of 2000 units at R40 per unit
Day 2: Receipt of 1500 units at R35 per unit
Day 5: Issue of 1000 units

Calculate the value of stock at the end of day 5 using the following methods of inventory evaluation:

3.4.1 Fifo Method (3)

3.4.2 Lifo Method (3)

3.4.3 Weight average method before day issue (4)

3.5 Name any THREE objectives of inventory management. (3)
[26]

SECTION D: PRODUCTION COSTING

QUESTION 4

4.1 Describe or explain the term *cost.* (2)

4.2 Explain what is meant by *prime cost*. (2)

4.3 Give any SIX examples of indirect labour cost. (6)
[10]

TOTAL: 100

Copyright reserved