higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

PRODUCTION AND QUALITY CONTROL N5

(8140055)

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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. Sketches must be large, neat and fully labelled.
5. Write neatly and legibly.

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QUESTION 1

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.1–1.15) in the ANSWER BOOK.

1.1 Capacity is the rate of output that can be achieved from a process, measured in units of output, per unit of time.

1.2 Design capacity is the rated output; the equipment was designed to produce when running under normal conditions without stoppages.

1.3 Shop floor management provides and formalises an integrated framework of processes with defined roles, responsibilities and competencies to sustain and improve efficiency.

1.4 Six sigma projects aim is to improve quantity as well as other business goals.

1.5 A Gantt chart is a simple way of visually representing the tasks of a project, their duration and their sequence of execution.

1.6 The important part of understanding lean thinking lies in the fundamental distinction between value and waste.

1.7 In order to achieve reliable supply, some manufacturers help their suppliers to improve their quality management systems and work with them on component designs that are easier to produce and assemble.

1.8 The aim of materials management is consequently to provide the correct material at the correct work point at the right time, in the right form and at the lowest cost.

1.9 Purchasing responsibilities extend from the first to the last points, and include various intermediate responsibilities.

1.10 Fixed costs are those cost types which in totality tend to increase proportionately over the short term as the volume of production increases.

1.11 The FIFO method of inventory evaluation is characterised by higher profit but lower cash flow.

1.12 Piece work is an approach to organising work teams.

1.13 The term *Kaizen* refers to a technique used to pull orders through a manufacturing line to improve output.

1.14 Expediting means the speeding up of jobs to prevent bottlenecks downstream.

1.15 Demand that cannot be calculated because it is based on forecasts of customer demand is known as dependent demand.

(15 × 2) **[30]**

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QUESTION 2

2.1 Assume that a work centre has a demonstrated capacity of 650 units per day and receives the following manufacturing orders:

Day	1	2	3	4	5
Order	450	650	350	750	350

Prepare a table that will show the manufacturing schedule based on the following:

2.1.1 The backward loading technique. (5)

2.1.2 The forward loading technique. (5)

2.2 Name the SIX most important uses of cost data. (6)

2.3 The TABLE below shows the sales forecast that a particular machine has to meet over a four-month period.

Copy the TABLE in the ANSWER BOOK and complete the production plan and load for this machine, based on a waste factor of 4% and a load profile of 5 units per hour.

	March	April	May	June
Sales forecast (units)	1 080	1 130	1 250	1 390
Production plan (units)				
Load (hours)				

(9)
[25]

QUESTION 3

3.1 Draw a diagram to show the capacity management hierarchy. (11)

3.2 Discuss SEVEN important responsibilities of the purchasing department.
(7 × 2) (14)
[25]

QUESTION 4

4.1 Name THREE ways in which capacity is measured. (3)

4.2 List SEVEN of the most common wastes in manufacturing as identified by Taiichi Ono of Toyota. (7)

4.3 Total quality management programmes are often used in batch and assembly operations, where process quality has a big effect on performance.

Name and discuss the FOUR elements which are included in these programmes. (10)
[20]

TOTAL: 100

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