higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1420(**E**)(A5)T

NATIONAL CERTIFICATE

PRODUCTION AND QUALITY CONTROL N5

(8140055)

5 April 2018 (X-Paper)
09:00–12:00

This question paper consists of 5 pages.

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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. Choose the answer and write only 'true' or 'false' next to the question number (1.1–1.10) in the ANSWER BOOK.

1.1 The factor weighting method allows each factor under consideration to be rated independently for each potential site and for each factor to be weighted according to the relative importance of each factor.

1.2 The centre-of-gravity method is based on the premise that a warehouse is located centrally to the shops receiving goods from it, which minimises the overall costs of distribution.

1.3 In manufacturing operations capacity to make products is created by not investing in the equipment.

1.4 A strong focus on systematic change point management contributes to plan and execute preventive countermeasures in a scheduled way with negative impact on process variation and overall efficiency.

1.5 S5 can be defined as sort, set in order, shine, standardise and sustain.

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 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 costs which in totality tend to increase proportionately over the short term as the volume of production increases.

(10 × 2) **[20]**

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QUESTION 2

2.1 Draw a diagram which shows the capacity management hierarchy. (11)

2.2 Briefly discuss the principles of lean thinking under the following headings:

2.2.1 Defining the value from the perspective of the end customer (3)

2.2.2 Identifying the value stream for each product/service and eliminating waste (3)

2.2.3 Making the remaining steps creating value flow (2)

2.2.4 Providing only what customers want and only when they want it (3)

2.2.5 Pursuing perfection (3)

2.3 Name any FIVE forms of waste which occur in service operations as identified by John Maleyeff. (5)

[30]

QUESTION 3

3.1 Assume that a company experiences the following stock movements over a five-day period:

Day 1 : Receipt of 650 units at R24 per unit
Day 2 : Receipt of 1200 units at R19 per unit
Day 5 : Issue of 650 units

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

3.1.1 FIFO method (3)

3.1.2 LIFO method (3)

3.1.3 Weighted average method. (4)

3.2 Inventory control must occur for various reasons, and it is often necessary to compromise when objectives clash.

Discuss the most important aims of inventory control. (15)

[25]

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QUESTION 4

4.1 Name FIVE ways in which capacity and load can be balanced. Also state whether each is a capacity response or a load response. (10)

4.2 Explain each of the following types of costs:

4.2.1 Marketing costs (4)

4.2.2 Administrative costs (4)

4.3 The annual demand for a chemical is 950 kg, the ordering cost is R25 per order; the inventory holding cost is 20% per year and the unit cost is R100 per kg.

Calculate the economic order quantity.

EOQ = √(2DS/IC) (7)
[25]

TOTAL: 100

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