higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

PRODUCTION AND QUALITY CONTROL N6

25 JULY 2019

This marking guideline consists of 5 pages.

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QUESTION 1

1.1 B
1.2 A
1.3 A
1.4 D
1.5 C
1.6 B
1.7 C
1.8 C
1.9 A
1.10 D
1.11 D
1.12 B
1.13 C
1.14 A
1.15 B

(15 × 2) **[30]**

QUESTION 2

2.1 False.✓✓ Good companies have always recognised the need for continuous improvement. Nowadays, the rate of improvement is critical if companies wish to become world class.✓ Companies need to improve faster than their competitors do and this requires radical improvements from time to time.✓ (4)

2.2
- Overproduction
- Waiting time
- Material handling and transport
- Processing waste
- Stock
- Rejects and defects
- Inspection
- Loss of customer goodwill (Any 6 × 1) (6)

2.3 Cellular manufacturing is the linking of manufacturing operations according to their product families and similarity of manufacturing process. (2)

Advantages
- Reduced lead times
- Reduced queues
- Reduced work in progress
- Improved quality
- Higher visibility of problems
- Improved teamwork (Any 4 × 1) (4)

2.4
- Adhere to good housekeeping principles and keep equipment clean.
- Report oil leakages and ensure they are repaired.
- Apply experience of the equipment to recognise unusual noises, vibrations, et cetera which may indicate problems.
- Continually check the tightness of nuts and bolts.
- Report any deterioration in the quality of the product being produced.
- Continually check monitoring gauges and instruments and report any abnormal readings. (Any 4 × 1) (4)

2.5
- Identify internal and external set-up activities.
- Start external activities while the preceding batch is being worked on.
- Convert as many internal activities into external activities as possible.
- Continuously strive to improve or eliminate elements of the set-up procedure. (4)

[24]

QUESTION 3

3.1 3.1.1

SOURCE OF COST	COST	CATEGORY
Audits of suppliers	R40 000	(a) Prevention cost✓
Final inspection	R100 000	(b) Appraisal cost✓
Implementing a quality system	R50 000	(c) Prevention cost✓
In-process inspection	R200 000	(d) Appraisal cost✓
Processing waste	R250 000	(e) Failure cost✓
Scrapping of final product	R80 000	(f) Failure cost✓
Training of staff	R250 000	(g) Prevention cost✓
Warranty costs	R30 000	(h) Failure costs✓

(8)

3.1.2 Prevention cost = R40 000 + R50 000 + R250 000
= R340 000

Appraisal cost = R100 000 + R200 000 = R300 000

Failure cost = R250 000 + R80 000 + R30 000
= R360 000 (3 × 1) (3)

3.1.3 Cost of poor quality = Failure cost
= (R360 000/R10 000 000) × 100%✓
= 3,6%✓ (2)

3.2 3.2.1 Eliminating incoming inspection delegates responsibility for quality of raw materials to suppliers, thereby encouraging a partnership approach.✓ It also saves company money.✓ (2)

3.2.2
- Clearly specify requirements to suppliers.
- Build credibility and trust with suppliers.
- Conduct periodic quality audits of suppliers to ensure capability and compliance. (3)

3.3
- It provides an objective means of measuring quality.
- It describes quality in the language of management (money).
- It allows the identification of sources of waste and to take action to correct them.
- It allows the identification of priority problems areas.
- It helps to make everyone aware of the need to produce products 'right first time, every time'. (Any 3 × 1) (3)

3.4
- Project name/title
- Reasons for the project
- Improvement objectives
- Timescale for completion
- Team members
- Name of project facilitator
- Name of management champion (Any 4 × 1) (4)

[25]

QUESTION 4

4.1 4.1.1 Throughput = Sales less cost of sales (material costs)
= (R200 × 50) – (R80 × 50)✓
= R10 000 – R4 000
= R6 000✓✓

4.1.2 10% of products rejected is 45 products produced per day
New throughput = (R200 × 45) - (R80 × 50)
= R9 000 - R4 000
= R5 000✓

(2 × 3) (6)

4.2
- Continuous improvement involves achieving a number of small incremental improvements.✓
- Business process re-engineering achieves quantum leap improvement✓ through a fundamental rethink and redesign of the process under investigation.✓
- CI usually focuses on activities within processes.✓
- BPR focuses on whole processes.✓ (5)

4.3
- Generic bench marking: Comparisons with companies with similar work processes, but which are in a different line of business/industry
- Competitive bench marking: Comparison with competitors in the same industry (2 × 2) (4)

4.4
- They are directly related to business strategy.
- They include nonfinancial measures.
- They are relevant.
- They change over time as needs change.
- They are relatively simple and easy to use.
- They provide fast and timely feedback.
- They foster continuous improvement. (Any 6 × 1) (6)

[21]

TOTAL: 100

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