higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

PRODUCTION AND QUALITY CONTROL N6

26 MARCH 2018

This marking guideline consists of 5 pages.

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SECTION A

QUESTION 1

1.1
1.1.1 False
1.1.2 True
1.1.3 False
1.1.4 False
1.1.5 True
1.1.6 True
1.1.7 True
1.1.8 True
1.1.9 True
1.1.10 True
1.1.11 True
1.1.12 True
1.1.13 False
1.1.14 True
1.1.15 False

(15 × 1) (15)

1.2 1.2.1
- Drum
- Buffer
- Rope (3)

1.2.2
- It stimulates sales, as sufficient stocks of finished products will be available at the right time and right prices.
- It promotes an even flow of production by eliminating rush orders and overtime on the one hand and idleness of workers, machines and equipment (as a result of raw and auxiliary materials, as well as tools, not being readily available) on the other.
- It reduces investment in stocks by scientifically planning order sizes, maintaining rapid turnover of stock and preventing an accumulation of raw materials and finished products.
- It promotes efficient production by utilising management services and relieving staff of time-consuming organising, planning and control activities.
- It prevents unnecessary wastage and ensures the lowest production cost for the production system concerned. (5)

1.2.3
- Job order or jobbing production
- Mass production
- Series or batch production (Any 2 × 1) (2)

[25]

TOTAL SECTION A: 25

SECTION B

QUESTION 2

2.1
- Five-step focusing process
- V-A-T logical-structure analysis
- Drum-buffer-rope scheduling method
- Buffer management
- Supply-chain management (5)

2.2
2.2.1 D
2.2.2 B
2.2.3 E
2.2.4 C
2.2.5 A

(5 × 1) (5)

2.3 Step 1: Identify system constraints. The first step is to identify constraints in the system that limits throughput or progress toward the goal.

Step 2: Decide how to exploit the constraints. Decide on a plan for the primary constraint that best supports the goals of the system. This requires taking advantage of the existing capacity at the constraint, which is often wasted by making and selling the wrong products as well as improper policies and procedures for scheduling and controlling the constraints.

Step 3: Subordinate everything else to the decisions in Step 2. Alter or manage the system policies, processes and/or other resources to support these decisions. Management directs its efforts towards improving the performances of the constraining task or activity and any other task or activity that directly affects the constraining task or activity.

Step 4. Elevate the constraints. Add capacity or otherwise change the status of the original resources as the dominating primary constraint. In this step additional capacity is obtained that will increase (elevate) the overall output of the constraining task or activity. This differs from Step 2 in that the added output comes from additional purchased capacity, such as buying a second machine, tool or implementing new technology.

Step 5. Return to Step 1. Do not let inertia become the new constraint – go back to Step 1, but do not allow previous decisions made in Steps 2 to 4 to become constraints. As a result of the focusing process, the improvement of the original constraining task or activity may cause a different task to become a constraining task or activity. Inertia could blind management to additional measures necessary to improve the systems output now limited by a new constraint. (5 × 3) (15)

[25]

TOTAL SECTION B: 25

SECTION C

QUESTION 3

3.1
- Reduction in downtime
- Reductions in inventory
- Reductions in scrap and rework
- Reduction in workspace
- Increased inventory turns
- Increased labour utilisation
- Increased equipment utilisation
- Improved service to customers (8)

3.2
- Record accounting information.
- Establish clerical organisation, procedures and methods.
- Plan the utilisation of office space.
- Undertake office management and supervise the office staff.
- Plan the organisational structure.
- Undertake wage calculations.
- Attend to correspondence.
- Collect and process statistics.
- Undertake cost calculations and cost control.
- Draw up and control budget.
- Communicate with other departments.
- Preserve documents and correspondence in archives. (12)

3.3
- Cuts down cost
- Data accurately collected
- Proper coordination between subsystem is possible
- Information is rapidly made available to management
- Gives management insight in setting and achieving uniform business objectives (5)

[25]

TOTAL SECTION C: 25

SECTION D

QUESTION 4

4.1
- Cause and effect diagram
- Check sheet
- Control chart
- Histogram
- Pareto chart
- Scatter diagram
- Stratification (Alternately, flow chart or run chart) (7)

4.2
- Well-defined objective or target
- Output standard
- Measuring mechanism
- Communication feedback signal
- Corrective action plan (5)

4.3
- Decreased production lead time
- Improved quality of products and services
- Dramatic increases in profitability
- Reduced inventory levels
- Reduced bottlenecks
- Management of constraints
- Curbing of statistical fluctuations
- Improved competition position
- Facilitation of strategic marketing and operational decisions
- Introduction of the marginal pricing concepts
- Application of continuous improvement at the supply chain level

(Any 7 × 1) (7)

4.4
- Size of the enterprise
- Managerial level
- Enterprise activity
- Decentralisation
- Enterprise climate
- Importance of the activity (6)

[25]

TOTAL SECTION D: 25
GRAND TOTAL: 100

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