higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

PRODUCTION AND QUALITY CONTROL N5

2 AUGUST 2019

This marking guideline consists of 4 pages.

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QUESTION 1

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

(14 × 2) **[28]**

QUESTION 2

2.1 It takes 6% longer, therefore efficiency is 94%.✓

Rated capacity = hours per day × days per week × utilisation × efficiency✓
= 15 hours/day × 6 days/week × 0,8 × 0,94✓
= 67,68 hours per week✓✓ (5)

2.2

	WEEK 1	**WEEK 2**	**WEEK 3**	**WEEK 4**
Standard hours required	102	95	92	90
Available hours	96	96	96	88
Daily excess/(deficit) in hours	(6)✓	1✓	4✓	(2)✓
Cumulative excess/(deficit) in hours	(6)✓	(5)✓	(1)✓	(3)✓

No the centre is not balanced,✓ since the load exceeds the available capacity.✓ (10)

2.3
- Work overtime – capacity response
- Subcontract some work – capacity response
- Focus on improving output of bottlenecks – capacity response
- Reroute some jobs to other work centres – load response
- Reschedule some orders – load response (5 × 2) (10)

[25]

QUESTION 3

3.1
- Setup time
- Move time
- Queue time
- Run time
- Wait time (Any 4 × 1) (4)

3.2 Under a make-to-order policy, products are only manufactured when specifically ordered by customers.✓ No finished goods stock is carried.✓

Advantage: The cost of carrying inventory is reduced.✓
Disadvantage: The customer has to wait for his/her product.✓ (4)

3.3

Activ-ity	Days														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A															
B															
C															
D															
E															
F															
G															

Overall length of project = 15 days✓ (10)

3.4
- Manufacturing lead times: If targets are not met, inventory levels can rise and delivery dates may be missed.
- Customer service: If customer service targets are not met, customers may look for alternative suppliers and leave.
- Work-in-progress levels: If WIP levels are higher than the targets set, bottlenecks may result in a reduction in customer service.
- Schedule performance: Slippage may cause delivery dates to be missed.
- Product quality: If specifications are not met, cost of poor quality will rise and substandard products may reach the customer.
- Efficiency of work centres: Inefficiency will result in an increase in WIP and longer lead times.
- Reprocessing and scrap: If these are too high, costs rise and bottlenecks may result as a result of the reprocessing of products. (Any 3 × 2) (6)

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QUESTION 4

4.1 EOQ = √2DS/IC
= √2 × 5 000 × 2/0,3 × 1 000✓✓
= √270 000/300✓
= √900
= 30 units✓✓ (5)

4.2
- Provide a secure storage place.
- Limit access to the storage area.
- Use formal locations within this area to store inventory.
- Have authorised receipt and issue procedures.
- Undertake systematic stock taking on a periodic basis.
- Clearly identify/label inventory items. (Any 5 × 1) (5)

4.3
- Customer service
- Inventory investment
- Manufacturing, purchasing and distribution
- Profitability
- Return on investment (5)

4.4 LIFO stands for 'last-in-first-out' and assumes that the most recently received stock will be issued first.✓ The issues are therefore valued at the cost of the remaining latest receipts.✓

LIFO advantage: Increases cash flow✓

LIFO disadvantage:
- Increases cost of goods✓
- Decreases profits
- Complicated and difficult to manage (Any ONE)

FIFO stands for 'first-in-first-out' and assumes that the items that are received first are issued last.✓ The issues are therefore valued at the cost of the oldest stock.✓

FIFO advantage:
- Decreases cost of goods sold✓
- Increases profits (Any ONE)

FIFO disadvantages:
- Decreases cash flow✓
- Complicated and difficult to manage (Any ONE) (8)

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TOTAL: 100

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