

Lean Six Sigma Green Belt Sample Questions

ENG_10Qs

Study: Lean Six Sigma – Green Belt

Instructions:

1. All 10 questions should be attempted.
2. All answers are to be marked on the answer sheet provided by using a pen.
3. There is only one correct answer per question.
4. You have 30 minutes for this paper.
5. You must get 7 or more correct to pass.
6. You are allowed to use your own notes, training hand-outs (binders), a dictionary plus maximum 2 other books
7. You are allowed to use a laptop computer with Minitab.
8. Use of other sources of information within the exam room, or outside the exam room by means of digital equipment, is not allowed.

Candidate Name: _____

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- 1 Customers at the self-service checkouts of a supermarket must scan each purchase and put it in a bag in the 'bagging area'. Often the customers receive the error message 'please put the item in the bag', because they cannot open the plastic bags quickly enough.

In the DMAIC roadmap, which of the following is determined before the Define phase Gate Review?

1. The customer's experience when opening a plastic bag takes longer than the checkout allows
2. Which parts of the scanning, bagging and weighing process are involved
3. The average time to open a bag; the average time taken for the error message to appear
4. Who has the most influence out of the customer, bag supplier and software supplier

- a. 1, 2, 3
- b. 1, 2, 4
- c. 1, 3, 4
- d. 2, 3, 4

- 2 According to the KANO model, which performance feature of a product or service is **MOST** likely to satisfy a customer's expectations?

- a. Compliance to industry standards
- b. Financial performance of production process
- c. Delightfully friendly sales assistant
- d. Reliability and robustness of the components

- 3 An egg distributor wants to monitor the number of eggs damaged or broken in transit. Each crate holds 288 eggs. Each shipment contains a different number of crates.

The number of eggs broken in transit has been counted. Because of the different size of each shipment, the control limits vary. On average 1 broken egg was found in each shipment.

What type of chart would be appropriate to capture this information?

- a. C chart
- b. U chart
- c. I-MR chart
- d. NP chart

- 4 After returning from a two-week vacation a manager reviewed the Xbar and R charts that were maintained during the manager's absence. One of the Xbar charts shows the last 50 points to be very near the centre line. In fact, they all seem to be within about one sigma of the centre line.

What is the **BEST** explanation for this occurrence?

- a. Somebody restored the original, wider control limit calculation
 - b. The process standard deviation has decreased and the control limits were not recomputed
 - c. There has been poor quality performance for quite some time
 - d. It shows that the operators did a very good job keeping the process close to target
- 5 Which is **NOT** a perspective described by the Balanced Scorecard (BSC) to develop metrics, collect data and analyze it?
- a. Individual and corporate self-improvement
 - b. Internal and external customer satisfaction
 - c. Expected return on investment
 - d. Commercial and market sensitivity
- 6 A production manager has asked a member of the production team to present a summary of the team's performance over the past three months.

The data presented was clear and concise, and delivered in a professional manner. However, the data showed the team's performance to be lower than expected, and that one member in particular had failed to meet several of the performance targets set.

Which response from the production manager would **NOT** be appropriate?

- a. Publicly compliment the presenter on their format, content and delivery
- b. Openly discuss and share errors in individual performance
- c. Explain the danger to the business of missing the performance targets
- d. Tell the team they're smart and capable, and that's why more is expected of them

7 A process produces the following statistics:

Step	Scrap	Rework	Out
A	6	4	80
B	6	2	90
C	5	2	75
Total	17	8	245

What is the Rolled Throughput Yield (RTY) for this process?

- a. 74%
- b. 85%
- c. 92%
- d. 93%

8 A project team at a Pizzeria restaurant must create a current-state value stream map to improve their pizza-making process. The project leader has gathered a team that includes the wait staff, kitchen staff and management to ensure that everyone who is involved in the process is represented. The team create a high-level map of the process by gathering information about each step, including activities, cycle times, defects and inventory; some of which are given in the table below.

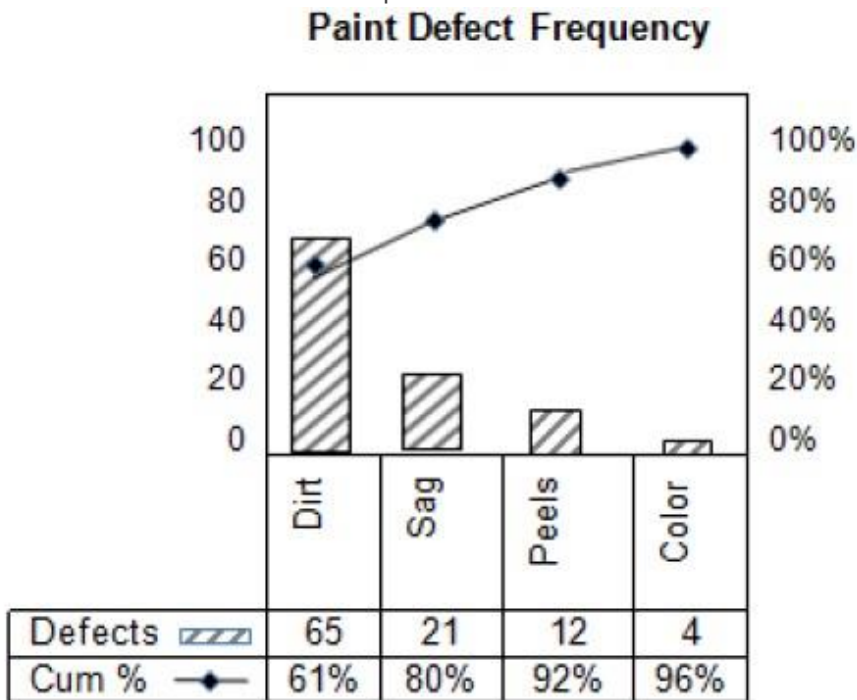
The scope of the pizza-making process value stream is from the time the customer places an order to the time that the pizza is delivered to the customer's table (in minutes).

	Cycle Time	Value-added Cycle Time
Wait staff take order	2.00	0.50
Walk order to kitchen	2.00	0.00
Make dough, add sauce	1.25	1.00
Pass base to topping area	2.00	0.00
Add cheese and toppings	0.75	0.50
Move to oven	4.00	1.50
Cook pizza	6.00	6.00
Deliver to table	2.00	0.50
Totals	20.00	10.00

Which action would reduce the Cycle Time?

- a. Introduce an electronic flow of information between wait staff and kitchen
- b. Install a conveyor pizza oven to create a first in, first out (FIFO) lane
- c. Create a supermarket supply of ready-made pizza bases
- d. Implement a Kanban system to ensure the right number of pizza bases are created

9 The Pareto chart below shows the paint defects from an automotive assembly plant:



The assembly plant manager has decided that there is no question as to which problem needs to be addressed first, the 'Dirt' defect.

Is the assembly plant manager correct in this conclusion?

- a. No, because cumulatively 'Color' represents the highest percentage of all defects
- b. No, because 80% of the defects should be resolved by fixing 20% of the problems
- c. Yes, because cumulatively 'Dirt' represents the lowest percentage
- d. Yes, because 'Dirt' is the most frequently occurring reason for defects

- 10** The manager of a coffee shop has created a list of customer requirements by listening to complaints, handing out surveys, holding focus groups and conducting interviews. One common need was Good Customer Satisfaction. In order to understand what it is that fulfils this need, the coffee shop manager has created a Critical to Quality (CTQ) Tree:

Need	Quality Driver	Critical to Quality (Ext)
Good Customer Satisfaction	Price	-Range £2.00-£3.50
	Coffee on offer	-Range offering choice-Tasty coffee-Fresh, no older than 5 minutes
	Staff	-Good pleasant staff-Prompt service < 5 minutes
	Surroundings	-Pleasant ambience-Clean and hygienic

Is this an appropriate translation of the Voice of the Customer (VOC) into Critical to Quality (CTQ) metrics?

- a. No, because the price should be a single fee rather than a range
- b. No, because 'pleasant' and 'tasty' are subjective and need further definition
- c. Yes, because the quality drivers cover a wide range of factors
- d. Yes, because this diagram should identify the factors of influence

Thank you for taking this exam.

Correction model

1. 1 pt.1 pt.	B6.	B
2. 1 pt.1 pt.	D7.	A
3. 1 pt.1 pt.	B8.	A
4. 1 pt.1 pt.	B9.	D
5. 1 pt.1 pt.	D10.	B