

Applying Lean Six Sigma in Health Care 1st edition
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SKU: 9781284170757-TEST-BANK

Chapter 1 – Introduction to Lean Six Sigma

Multiple Choice

1. The goal of Lean 6 σ is to reduce errors, cost, performance time, space requirements, and/or employee turnover by

- A. 25%
- B. 50%
- C. 75%
- D. 87%**
- E. 93%

2. Anesthesia deaths in the U.S. since the 1970s have fallen by

- A. 25% to 35%
- B. 45% to 55%
- C. 65% to 75%
- D. 85% to 95%**

3. The STEEEP goal of effectiveness

- A. Seeks treatment that does not injure a patient
- B. Reduces harmful delays to patients
- C. Restores patient health or reduces their pain**
- D. Minimizes the cost of treatment
- E. Ensures that treatment does not vary based on race, gender, or age

4. The STEEEP goal of equity

- A. Seeks treatment that does not injure a patient
- B. Reduces harmful delays to patients
- C. Restores patient health or reduces their pain
- D. Minimizes the cost of treatment
- E. Ensures that treatment does not vary based on race, gender, or age**

5. Ensuring treatment is delivered using the minimum amount of resources is the STEEEP goal of

- A. Timeliness
- B. Effectiveness
- C. Efficiency**
- D. Patient centeredness
- E. Equity

6. Ensuring treatment is based on the individual's preferences, needs, and values is the STEEP goal of

- A. Timeliness
- B. Effectiveness
- C. Efficiency
- D. Patient centeredness**
- E. Equity

7. The five principles of Lean 6σ are

- A. Value, value stream mapping, pull, flow, and perfection**
- B. Value, timeliness, pull, flow, and perfection
- C. Value, value stream mapping, pull, flow, and price
- D. Value, timeliness, pull, flow, and price

8. The value of a product is determined by

- A. The good or services delivered
- B. How a good or service is delivered
- C. Performance time
- D. Where a good or service is delivered
- E. All of the above**

9. Flow

- A. Focuses on product features that enhance customer satisfaction
- B. Is every action taken to design, produce, and deliver a product
- C. Builds continuous movement processes and reduces wasted motion, interruptions, and delays**
- D. Produces products when demanded by customers
- E. Minimizes defects

10. Value stream mapping

- A. Focuses on the product features that enhance customer satisfaction
- B. Documents every action taken to design, produce, and deliver a product**
- C. Builds continuous movement processes and reduces wasted motion, interruptions, and delays
- D. Produces products when demanded by customers
- E. Minimizes defects

11. Which of the following is not essential work, therblig class 1, according to Gilbreth?

- A. assembly
- B. disassembly
- C. use
- D. transport**

12. Preparation, therblig class 2,

- A. changes a good or service
- B. set-ups or transports materials**
- C. locates or inspects inputs
- D. plans work

13. The foundation of the Toyota House is comprised of

- A. Load leveling, standardization, and continuous quality improvement**
- B. Value stream mapping, pull, and delivering product when and where needed
- C. Root cause analysis, prevention, and a focus on why rather than who
- D. Developing people

14. Load leveling is

- A. Distributing work to ensure all workers are fully employed, neither over- or underworked**
- B. Proactively seeking out and capitalizing on opportunities
- C. Standardizing inputs and processes to ensure consistent output
- D. Striving for prevention of rather than correction of defect

15. The Lean 6 σ forerunner who introduced interchangeable parts was

- A. Adam Smith
- B. Eli Whitney**
- C. Frank Gilbreth
- D. Henry Ford
- E. Walter Shewhart

16. Set-in-place in 5S is designed to

- A. Simplify the work area and reduce clutter
- B. Define locations for tools and supplies**
- C. Ensure a clean work area
- D. Ensure all workers use the same procedures

17. Sort in 5S is designed to

- A. **Simplify the work area and reduce clutter**
- B. Define locations for tools and supplies
- C. Ensure a clean work area
- D. Ensure all workers use the same procedures

18. A Kaizen event is

- A. Discrete, independent, and opportunistic problem solving
- B. **A targeted project focusing on improving the performance of a process**
- C. An organization philosophy focusing on continuous improvement
- D. An approach to inventory management

19. According to Shumula obtaining green belt certification adds

- A. \$5,000 to one's salary
- B. **\$10,500 to one's salary**
- C. \$22,000 to one's salary
- D. \$46,000 to one's salary

20. According to Shumula obtaining black belt certification adds

- A. \$5,000 to one's salary
- B. \$10,500 to one's salary
- C. \$22,000 to one's salary
- D. **\$46,000 to one's salary**

True or False

- 1. T/F Lean is a statistical approach aimed at minimizing variation with a goal of 3.4 defects per million opportunities
- 2. T/F The SQTCM goals are satisfaction, quality, timeliness, cost and morale
- 3. T/F Bertalanffy emphasized we should focus on the structure of systems and the interaction of its elements rather than system functions.
- 4. T/F The waste of over-processing arises when unnecessary motion is taken to complete an action.
- 5. T/F The waste of over-processing arises when more work is performed than required to produce a product or improve an outcome.

6. I/F An A3 is used to summarize the results of results of a Lean 6 σ project.
7. I/F In black box systems there are multiple acceptable ways to produce a good or service.
8. T/F The ultimate goal of SIPOC is to ensure consistent performance across all sites of an organization.
9. I/F The 30/30/30 exercise recommends 30 minutes of observation, identification of 30 problems or opportunities, and 30 minutes to correct one problem or implement one opportunity.
10. T/F There are approximately 1 million black belts in the U.S.