Lean Management -
Full Length Lean Management Simulation Test 2

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Q1.Value Stream Mapping looks at

SELECT THE CORRECT ANSWER

A. The people, material, and information flow in a value stream.
B. The material and information flows in a value stream.
C. The steps people take in designing and producing a product.

EXPLANATION

Correct answer: A. Value Stream Mapping helps you to see and understand the flow of the material and information as a product makes its way through the value stream.

Q2.Calculate the Takt Time based in the following situation: For a company that manufacture certain types of parts, the Customer demand is 51,600 parts per month. Typically, the company have 5 days working per week and on average 20 days per month. There are two, eight hour shifts. Lunch is 30 minutes per shift. Two, ten minute breaks are allowed per shift. The calculated Takt Time is:

SELECT THE CORRECT ANSWER

A. 20 seconds per part
B. 0.5 parts per minute
C. 3 minute per part

EXPLANATION

Correct answer: A. Calculate # of hrs per shift (8hr minus 30 minutes lunch minus 20 minutes for two breaks). Total 7 hrs 10 minutes per shift. That is 430 minutes per shift. There are two shifts in a

working day, so 860 minutes per day. In a month, average 20 working days - so, total amount of minutes available to produce is 860 multiplied by 20, that equals 17,200 minutes available in a month. Takt time would be total working time available 17,200 minutes divided by total units produced 51,600 in a month. The answer is 0.33 minutes per part (or 20 sec)

Q3.What would be considered as one of the biggest mistakes in implementing Lean Manufacturing
SELECT THE CORRECT ANSWER
A. Not providing training
B. Skipping the value stream mapping step
C. Implementing with Six Sigma

EXPLANATION
Correct Answer B: Value Stream Mapping Step is critical for the success of Lean and shoud not be skipped

Q4.If materials needed for any process are kept too far apart, what type of waste it would lead to?
SELECT THE CORRECT ANSWER
A. Motion Waste
B. Transportation Waste
C. Inventory Waste
D.

EXPLANATION
Correct Answer A: If any materials needed for any process are kept too far apart, it would cause motion waste.

Q5.Define Waiting type of waste
SELECT THE CORRECT ANSWER
A. Waiting time at bus
B. Waiting for any activity to complete
C. Average Customer waiting time on the support calls

EXPLANATION
Correct Answer B: The definition of waste related to Waiting is: Long period of inactivity for people, machine, or material waiting for each other.

Q6.Lean Manufacturing is a:
SELECT THE CORRECT ANSWER
A. Method for reducing labor cost
B. Efficiency improvement technique
C. Means to improve responseiveness to the customer

EXPLANATION

Correct Answer B: Lean focuses on reducing waste, reduce cycle time and improve value stream. Overall it will improve efficiency. And hence it is called efficiency improvement technique.

Q7.A Kanban is used as what part of the Lean Manufacturing to assure the proper amount of inventory and appropriate timing of inventory flow through a system.

SELECT THE CORRECT ANSWER

A. Just In Time Manufacturing
B. 5S
C. Efficiency improvement

EXPLANATION

Correct Answer A: Kanban is signboard based scheduling and inventory control system for just-in-time production.

Q8.What type of waste would be the following set of scenarios: Relocating inventory to get it out of the way, repeating walking to retrieve necessary parts at a Work Station or having a Shipping Dock located a significant distance from the warehouse.

SELECT THE CORRECT ANSWER

A. Conveyance
B. Overprocessing
C. Motion

EXPLANATION

Correct Answer C: Any activities in a process for moving inventory, people moving around, etc. would be considered as waste of type Motion

Q9.Color coding office files is what technique of 5S tool

SELECT THE CORRECT ANSWER

A. Set in order
B. Shine
C. Sustain

EXPLANATION

Correct Answer A: Color coding is the technique used to set and keep things in order.

Q10.What does OEE stand for?

SELECT THE CORRECT ANSWER

A. Overall equipment effectiveness
B. Original equipment effectiveness
C. Original electronic equipment

EXPLANATION

Correct Answer A: OEE stands for Overall equipment effectiveness which evaluates and indicates how effectively a manufacturing operation is utilized.

Q11.What is the best way to begin the mapping for value stream?

SELECT THE CORRECT ANSWER

A. Corporate wide
B. Across multiple facilities
C. At the process level, for example in a single work-cell

EXPLANATION

Correct Answer C: Always the value stream mapping need to sart with the single work-cell at individual process level to get good end to end perspective

Q12.5S (Choose the best answer)

SELECT THE CORRECT ANSWER

A. Is a key to reducing inventory to improve lead time?
B. Is about standardizing the way we do things
C. Forms a foundation for all other improvement activities

EXPLANATION

Correct Answer B: 5S is about standardizing the way we do things. If we have 5S in place, it helps in other improvement activities

Q13.Define Over-Processing type of waste

SELECT THE CORRECT ANSWER

A. Using validations in place to be doubly sure
B. Using Machine for longer than recommended time
C. Effort which adds NO value to a product or service

EXPLANATION

Correct Answer C: The definition of Over-Production type of waste is: Effort which adds NO value to a product or service. Enhancements that are not valued by customers would be considered waste.

Q14.Define Defects type of waste

SELECT THE CORRECT ANSWER

A. Any rework done to Fix an defect
B. Any Defect that cannot be fixed is waste
C. Defective machinery will produce defective parts

EXPLANATION

Correct Answer A: The definition of Defect is: Rework needed to rectify the defect in product or service to fulfill customer requirements.

Q15.What are Goals of Poka-Yoke (Mistake Proofing)

SELECT THE CORRECT ANSWER

A. Update Process to prevent mistakes and build defect free product
B. Repair defective product
C. Eliminate problem people

EXPLANATION

Correct Answer A: Poka Yoke is about improving the process to prevent mistakes from happening and in case mistakes happen, it can be detected as soon as possible. This helps in creating defect free products

Q16.What type of Lean Tool is used in this example: Color-coding a part so that it can be easily be located

SELECT THE CORRECT ANSWER

A. Mistake-Proofing
B. 5S
C. Kaizen

EXPLANATION

Correct Answer B: 5S is the Lean tool used here. The second S stands for Seiton (Stabalize) is used to color/mark parts so that it is easy to identify

Q17.A major barrier to inventory reduction and batch size reduction is:

SELECT THE CORRECT ANSWER

A. Long set-up changeover times
B. 5S activities
C. Lead time reduction

EXPLANATION

Correct Answer A: Whereever there is high time spent on changeover, it becomes barrier for inventory reduction and batch size reduction

Q18.A production engineer used the 5s approach of Lean to set up a control method with frequently used tools. Which of the 5s techniques has he or she used?

SELECT THE CORRECT ANSWER

A. Stabalize
B. Shining
C. Sustain

EXPLANATION

Correct Answer A: Frequently used tools are organized for easy access. This is the Seiton technique of 5S to put things in order which stands for Stabalize or Straighten

Q19.Set-up Time is typically classified in two categories as:

SELECT THE CORRECT ANSWER

A. Internal or external
B. Value-added or non value added
C. High cost and low cost

EXPLANATION

Correct Answer B: Any activity can be classificed as value-added or non-value-added. Setup time is the time spent setting up the production system, this can be classified in these two categories.

Q20.Which of the following concepts is mostly associated with Taiichi Ohno

SELECT THE CORRECT ANSWER

A. 5S
B. Toyota Production System
C. Statistical Process Control

EXPLANATION

Correct Answer B: In 1930 Kiichiro Toyoda, Taiichi Ohno, and others at Toyota revisited Ford's original thinking, and invented the Toyota Production System

Q21.Name the person who initiated and implemented the waste reduction methodology in America

SELECT THE CORRECT ANSWER

A. W. Edwards Deming
B. Taiichi Ohno
C. Henry Ford

EXPLANATION

Correct Answer C: Henry Ford's dramatic gains in implement procrss improvements in Ford could be seen as the earliest examples of waste reduction.

Q22.What type of Action is taken in this scenario: Action taken to prevent occurrences of a problem which has never occurred such not allowing smoking in the building to prevent the first time occurrence of a fire in the building

SELECT THE CORRECT ANSWER

A. Corrective Action
B. Preventive Action
C. Improvement Action

EXPLANATION

Correct Answer B: The problem has nevery occurred, and any action taken to prevent it from happening is called Preventive Action. In case any issue is occurred and steps taken to prevent it from happening in future - it would be called Corrective action

Q23.In an factory, an incident occurs and then, the management takes an action and decides to provide specific training to the machine operator to follow the right set of procedures to prevent things from happening. In this situation, what is the type of action taken here.

SELECT THE CORRECT ANSWER

A. Corrective Action
B. Preventive Action
C. Disciplinary Action

EXPLANATION

Correct Answer A: The problem has already occurred, and hence it would fall into Corrective action. If any action is taken to prevent any issue from occurring in the first place it would be termed as preventive action. Corrective action helps prevent issues from recurring

Q24.What type of Lean Tool is used in this example: The machine does not operate on a part, if the part is not kept in the right order.

SELECT THE CORRECT ANSWER

A. Poka Yoke
B. 5S - Sort
C. Value Stream Mapping

EXPLANATION

Correct Answer A: The right answer is Poka Yoke. Using Fixed-Value Device concept of Mistake Proofing, this helps in preventing any defects

Q25.In a production system, when somebody makes something earlier or faster than required by the next process (just-in-case if it is needed), is an example of which type of waste?

SELECT THE CORRECT ANSWER

A. Inventory
B. Overprocessing
C. Overproduction

EXPLANATION

Correct Answer C: Any extra production that is done assuming or anticipating they may need it in future OR creating access parts just-in-case if it is needed

Q26.Which of the following is not a type of waste

SELECT THE CORRECT ANSWER

A. Validation
B. Defect

C. Over Processing

EXPLANATION
Correct Answer A: Validation is not a waste. It is needed activity to ensure the product is working as expected. In case a defect is found, any activity done to rectify the defect and re-validate, all of those will be considered as waste under the category Defect

Q27.What is the main purpose of Lean
SELECT THE CORRECT ANSWER
A. Problem Solving
B. Cost Reduction Program
C. Creating more value for customer with fewer resources

EXPLANATION
Correct Answer C: Lean is about creating more value for the customer with fewer resources.

Q28.What are Lean Principles in the right order
SELECT THE CORRECT ANSWER
A. Identify Value, Map Value Stream, Create Flow, Establish Pull, Seak Perfection
B. Map Value Stream, Create Flow, Identify Value, Establish Pull, Seak Perfection
C. Establish Pull, Seak Perfection, Identify Value, Map Value Stream, Create Flow

EXPLANATION
Correct Answer A: The correct sequence for Lean Principles is to first identify the value as defined by customer. After that comes Mapping the value stread followed by creatin flow.

Q29.What would be an appropriate definition of Waste
SELECT THE CORRECT ANSWER
A. Anything in your process or product, for which the customer would not be willing to pay for
B. People wasting time browsing internet
C. Customer Calls that incur additional cost

EXPLANATION
Correct Answer A: If there is anything that the customer would not be willing to pay for, either process or product, it could be considered as waste.

Q30.Toyota Production System was invented in which year.
SELECT THE CORRECT ANSWER
A. Year 1930
B. Year 1913
C. Year 1970

EXPLANATION

Correct Answer C:TPS was developed later on around the 1970s. LEAN is a philosophy while TPS is a program or method to achieve the LEAN philosophy.

Q31.in Lean, TPS stands for

SELECT THE CORRECT ANSWER

A. Total Process Solution
B. Total Production System
C. Toyota Production System

EXPLANATION

Correct Answer C: TPS stands for Toyota Production System in Lean

Q32.In Lean, JIT stands for

SELECT THE CORRECT ANSWER

A. Just In Time Manufacturing
B. Just Invetory and Traffic
C. Just In Toyota Production System

EXPLANATION

Correct Answer A: JIT stands for Just-In-Time manufacturing where the process produces only when it is needed by the customer

Q33.What Lean Manufacturing approach or tool will enable to Get the right thing at the right place at the right time

SELECT THE CORRECT ANSWER

A. Just In Time Manufacturing
B. Kanban
C. Kaizen

EXPLANATION

Correct Answer A: JIT stands for Just-In-Time manufacturing where the process produces only when it is needed by the customer. JIT will get the right thing at the right place at the right time.

Q34.What are the key metrics to track for any business to be successful

SELECT THE CORRECT ANSWER

A. Sales Force, Valuation, partners
B. Employees, customer and profits
C. Products, Compalints, Support

EXPLANATION

Correct Answer B: While all the metrics are useful, it is important to focus on the key metrics and these three metrics Employees, Customers and Profits are key.

Q35.How can one achieve Cash Flow Improvement (Please select most appropriate answer)

SELECT THE CORRECT ANSWER

A. Reduce Inventory, reduce wait time
B. Charge more to the customers
C. Reduce Cost

EXPLANATION

Correct Answer A: If we reduce inventory and wait time, it will significantly help in improving cash flow.

Q36.What are challenges of Lean implementation

SELECT THE CORRECT ANSWER

A. It is too much process
B. One may not get all benefits in Low Volume/High Mix production environment
C. Creates divides between teams

EXPLANATION

Correct Answer B: The challenge comes when you have low volume and high mix. This typically happens when lots of customizations are done, or when we procure from multiple vendors. Because of variations, the machines and process needs to be updated for different types.

Q37.The main objective of lean manufacturing is to

SELECT THE CORRECT ANSWER

A. Produce products with fewer options to simplify consumer choices
B. Keep labor costs as low as possible by using more of other resources
C. produce goods using less resources

EXPLANATION

Correct Answer C: The main objective of Lean Manufacturing is to Produce goods using fewer resources.

Q38.What is the definition of Inventory type of waste?

SELECT THE CORRECT ANSWER

A. Storing parts at other location
B. Any supply in excess to process requirements necessary to produce goods or services just-in-time
C. Finding and removing defective inventory from the stock

EXPLANATION

Correct Answer B: Any time there is excess inventory than the need to product just-in-time, would be considered as inventory type of waste

Q39.What is the definition of Transportation type of waste?

SELECT THE CORRECT ANSWER

A. Any movement of that does not add value
B. Money spent on transportation of employees
C. Job transfer of employees from one city to another

EXPLANATION

Correct Answer A: We can define waste due to Transportation as: any movement of that does not add value. It can be movement of material, supplies, or resources.

Q40.What type of waste would be the following scenarios potentially cause?: All the parts that come in are retrieved or used in the LIFO (Last In First Out) order

SELECT THE CORRECT ANSWER

A. Transportation
B. Inventory
C. Defect

EXPLANATION

Correct Answer B: This would cause Inventory type of waste. As the parts that came in earlier either are getting used very late or are not getting used for long time. It is recommened to use FIFO (First In First Out) model to reduce the inventory type of waste.

Q41.What is more appropriate definition of Non-Value-Add Activity

SELECT THE CORRECT ANSWER

A. There is no monetory value involved in activity
B. Any activity that do not add any value to the product
C. The improvements activities cannot be valued by the organization

EXPLANATION

Correct Answer B: It is defined as any activity which clearly creates no value, which can be removed immediately with minimum or no capital investment, and with no detrimental effect on end value

Q42.In a software development process what would be considered as waste

SELECT THE CORRECT ANSWER

A. Time spent in reviewing the design
B. Time spent on support
C. Time spent on fixing defects

EXPLANATION

Correct Answer C: Any time spent in correcting something that could have been done, right the first time is considered as waste of type defects

Q43.Define motion type of waste

SELECT THE CORRECT ANSWER

A. Friction caused due to motion would create problems in the machinery and create higher waste
B. Any Energy consumed by machinery during motion
C. Any movement of people, resources, or machines which do not contribute or add value to the product or service.

EXPLANATION

Correct Answer C: The definition of Motion type of waste is: Any movement of people, resources, or machines which do not contribute or add value to the product or service.

Q44.What type of waste would be the following scenarios potentially cause?: The parts were delivered late by the supplier due to which the production had to be stopped

SELECT THE CORRECT ANSWER

A. Waiting
B. Motion
C. Inventory

EXPLANATION

Correct Answer A: Late deliveries or delays that impacts the production will be considered as waste of type waiting

Q45.Define Overproduction type of waste

SELECT THE CORRECT ANSWER

A. Producing excess quantity than needed
B. Producing over and above the capacity of the machine
C. Parts producted during over time shift

EXPLANATION

Correct Answer A: The definition of Over-Production type of waste is: Producing faster or excess quantity than the internal or external customer needs.

Q46.Is the below mentioned statement True or False: A pull production system is a production system where you make as much product as you can regardless of whether the customer needs it or not

SELECT THE CORRECT ANSWER

A. True
B. False
C. Not enough information

EXPLANATION

Correct Answer B: A Pull production system will make product only as much as needed by the customer from the next steps

Q47.One-piece-flow means

SELECT THE CORRECT ANSWER

A. Batch production
B. Larger Lot Sizes
C. One poece moves at a time to the next operation

EXPLANATION

Correct Answer C: One-piece Flow refers to the concept of moving one workpiece at a time between operations within a workcell.

Q48.What type of waste would be the following scenarios potentially cause?: An machine produces in large batch size, usually higher than the need from the next process

SELECT THE CORRECT ANSWER

A. Inventory
B. Over Production
C. Over Processing

EXPLANATION

Correct Answer B: If the system is processing large lot size batches, the production output might be much higher than needed by the next process, this would cause unnecessary waste.

Q49.In IT sector, time and effort spent in testing the software, fixing bugs, and retesting would be considered as what type of Waste?

SELECT THE CORRECT ANSWER

A. Waiting
B. Defects
C. Over Processing

EXPLANATION

Correct Answer B: Any effort spent on testing, bug fixes and retesting would be considered as waste of type defects. If this was done, right the first time, we would not have this waste.

Q50.Define Underutilized Skills type of waste

SELECT THE CORRECT ANSWER

A. Skill of the employees not utilized
B. Underutilization of the machine
C. Skill development training

EXPLANATION

Correct Answer A: The definition of waste due to underutilized skills is: Any skill that is not utilized to its full potential to add value to the customer.