

4. Schnay company produces only standard products and has an EPE equal to -0,76 days. Which indication does the company take?

(1 Point)

- ☐ Schnay company needs SMED to reduce setup time
- ☐ Schnay company is able to produce the whole volume but not the mix
- ☐ Schnay company is sure to produce both volume and mix required by customers
- ☐ Schnay company has not enough capacity to fulfill demand volume

5. Consider a manufacturing company producing shirts and define which activity is value adding.

(1 Point)

- ☐ Perform a quality control on the colour of the shirts before delivering them to the customers
- ☐ Sew the buttons on the shirts
- ☐ Bring the toolkit to the right place
- ☐ Clean the stations

6. Choose the one correct answer

(1 Point)

- ☐ Protection level of discounted price tickets is necessary to avoid cannibalization from full price tickets
- ☐ Having fixed capacity of event's seats, we should start selling full price tickets to ensure profit maximization and cover all the seats available
- ☐ In order to maximize my revenues, it is more convenient to sell all tickets to low cost passengers as I am sure they will buy them all

- ☐ Protection level of full price tickets is necessary to avoid cannibalization from discounted price tickets

7. What are the benefits of small scale capacity increments compared to big scale increments?

(1 Point)

- ☐ Financing availability
- ☐ Economies of scale
- ☐ Over utilization costs
- ☐ None of the answers

8. Usually, comparing SES company with a traditional company, SES company has

(1 Point)

- ☐ higher fixed cost and higher price
- ☐ higher fixed cost and lower price
- ☐ lower fixed cost and lower price
- ☐ lower fixed cost and higher price

9. Which is the longest time in an operations system?

(1 Point)

- ☐ Throughput time
- ☐ Value adding time
- ☐ Lead Time
- ☐ Not-value adding time

10. For the Shuldice hospital, which are the drawbacks of opening on Saturday?
(1 Point)

- ☐ Clients are not satisfied because the service provided is not exactly equal to the one provided during week.
- ☐ Not enough rooms available to guarantee 4 days of patients recovery, therefore the solution is not applicable.
- ☐ Lower bond among doctors and staff, because there was the creation of two sub-groups (one working only during weeks and one working also on Saturdays) and service provided on Saturdays not exactly equal to the one provided during week.
- ☐ There are no drawbacks for this solution, and therefore is the one applied by Shouldice hospital.

11. With Pre-Shop-Pool and workload control planning, the company:
(1 Point)

- ☐ Reduces WIP and Shop-floor time
- ☐ Controls the production and reduces necessity of manpower
- ☐ Immediately releases production orders to shorten lead-time
- ☐ Reduces setups

12. Shotter Spa produces pencil and works with 2 shifts ($T_a=900$ min/day). The average demand is 300 pencil/day. There are two production stages, both fully dedicated and with availability of 100%: P1 ($CT=30$ sec/pencil; $CO=5$ min/setup) and P2 ($CT=25$ sec/pencil; $CO=0$ min/setup). Which is the Minimum Batch size for the company?
(2 Points)

- ☐ It depends on customers' requests
- ☐ $MBS=2$ pencil/batch
- ☐ $MBS=150$ pencil/batch

☐ MBS= unitary batch

13. Lean Innovation concepts drive R&D teams to tackle wastes in order to
(1 Point)

- ☐ reduce time necessary to perform market research
- ☐ reduce time devoted to product features not desired by customers
- ☐ reduce time for finding new customers
- ☐ execute many projects simultaneously

14. Which structural elements strengthen the concept of Shouldice?
(1 Point)

- ☐ Double rooms for patients, meeting rooms (as tea room or TV room), special stairs, surgery rooms with U shape (as manufacturing cells).
- ☐ Surgery rooms with U shape which reinforce the teamwork concept among medical staff.
- ☐ Special stairs, designed ad hoc, which enable patients to recover fast from the hernia surgery.
- ☐ Double rooms for patients, meeting rooms (as tea room or TV room) and meetings with employees and patients within the canteen.

15. How would you define the Heuristic EMSR method?
(1 Point)

- ☐ An iterative method used to set the right overbooking strategy by appropriately allocating the available capacity whenever there are more than two classes of customers. The computation starts from the cheapest class.
- ☐ An iterative method used to maximize the profit by appropriately allocating the available capacity whenever there are only three classes of customers. The computation starts from the cheapest class.

- ☐ An iterative method used to maximize the profit by appropriately allocating the available capacity whenever there are more than two classes of customers. The computation starts from the most expensive class.
- ☐ An iterative method used to maximize the profit by appropriately allocating the available capacity whenever there are only three classes of customers. The computation starts from the most expensive class.

16. In the HQ case, which lever should you implement in order to improve flexibility performance?

(1 Point)

- ☐ Launch production of big batches in order to reduce setups.
- ☐ Increase automation grade in order to produce faster.
- ☐ Increase capacity saturation.
- ☐ Split production capacity in larger number of machines.

17. In the HQ case, which are the most significant performance to compete the new market?

(1 Point)

- ☐ Time (speed), price and flexibility (variety)
- ☐ Price and quality of design
- ☐ Time (speed), flexibility (product and plan), quality of design
- ☐ Quality (conformity) and time (delivery reliability)

18. What are the service product characteristics?

(1 Point)

- ☐ Simultaneity, Customer Participation, Homogeneity, Perishability
- ☐ Perishability, Intangibility, Time Consuming, Homogeneity, Customer participation, high fixed cost

- ☐ Intangibility, Simultaneity, Heterogeneity, Customer Involvement in the service process, Perishability
- ☐ Simultaneity, Heterogeneity, Invisibility, Customer Involvement in the service process, Perishability

19. You are a manager of a restaurant; if your service process (output) is affected by uncertainty, which lever do you invest in?

(1 Point)

- ☐ Reservation system
- ☐ Training
- ☐ Standardization of activities
- ☐ Increasing employees participation in process improvement

20. Considering a theme park service company, which of the following options could be considered an outcome of the company?

(1 Point)

- ☐ helpful staff, never a dull moment and enjoyable attractions
- ☐ good food and 18 rides used
- ☐ easy parking, lots of rides and fun time
- ☐ food outlets, toilets and white knuckle rides

21. What are the "PROs" of leading strategy for capacity management?

(1 Point)

- ☐ lower impact of unforeseen events and underestimating demand, spare parts capacity, better delivery reliability
- ☐ lower production costs, lower impact from overestimating demand, high plant utilization
- ☐ lower impact of unforeseen events, high plant utilization, better delivery reliability

- ☐ outbound cash flow, higher impact from overestimating demand, higher production costs

22. Esselunga, as per health guidelines, adopted an M/M/1 configuration for the waiting line outside the supermarket. How does the average throughput time of that system change when prioritizing over 65-year old over other customers ?
(1 Point)

- ☐ it decreases
- ☐ it increases
- ☐ it depends on peak times
- ☐ it remains unchanged

23. Lean organizations are characterized by
(1 Point)

- ☐ flat organisation composed by few large teams, high level of power delegation to team officers
- ☐ flat organisation composed by many small teams, high level of power delegation to people
- ☐ hierarchical organisation composed by few large teams, low level of power delegation to team officers
- ☐ hierarchical organisation composed by many large teams, low level of power delegation to people

24. Which characteristic belongs to a performance that is classified as Order Qualifier?
(1 Point)

- ☐ Company's quality performance is very good
- ☐ The performance defines the competitive advantage of the company
- ☐ If company's performance gets worse, the company loses order
- ☐ If company's performance improves, the company gains more order

25. Which is the most probable decision you can find if a company decides to drive digital transformation through lean principles:

(1 Point)

- ☐ Automations in order to exploit new technologies for increasing capacity.
- ☐ Supplier visibility on forecasts, orders and inventories in order to anticipate stock-outs
- ☐ Investments in real time scheduling.
- ☐ IoT for making data available to operators for taking decision

26. In a service company, which benefits does centralization of back-office activities give?

(1 Point)

- ☐ Shorter lead-times
- ☐ Less volume variability
- ☐ Activities overlapping
- ☐ Greater Flexibility

27. What are the "PROs" of lagging strategy for capacity management?

(1 Point)

- ☐ Lower impact from overestimating demand, spare part capacity and faster response time
- ☐ Lower impact from overestimating demand, low production costs and high plant utilization
- ☐ Higher impact from underestimating demand, longer response time and lower delivery reliability
- ☐ Lower impact of uncertainty and unforeseen events and low production costs

28. In a bar, the barman is able to serve 2 people every 8 minutes. The arrival rate of clients has been estimated to be around 10 people every hour. Estimate the saturation of the barman.

(1 Point)

- ☐ 0,5
- ☐ 0,2
- ☐ 1,5
- ☐ 0,67

29. For the Shuldice hospital, which are the drawbacks of opening a second clinic (even outside Canada)?

(1 Point)

- ☐ The difficulties of replicating the same concept, especially for what regards soft elements (bond among doctors and staff, relationship with patients, and the standard procedure of hernia surgery).
- ☐ The difficulties in hiring new doctors and staff.
- ☐ The difficulties of replicating the same concept, especially for what regards hard elements (patients rooms, stairs, surgerys rooms with U shape...).
- ☐ The difficulties in guaranteeing the same duration and predictability of hernia surgeries.

30. Investing in cross-trained employees supports company:

(1 Point)

- ☐ Increase overall capacity
- ☐ Reducing demand variability
- ☐ Making capacity more flexible
- ☐ Increase time-buffer for customers

31. Which of the following sentences about the future state map is wrong?

(1 Point)

- ☐ You need to define (1) material flow, (2) information flow and (3) timeline.
- ☐ The aim of the future state map is to reduce the overall process lead time of the company.
- ☐ The aim of the future state map is to couple all production stages. If you are not able to do so, you can decouple stages with supermarket pull system.
- ☐ Once you draw the current state map, you must find improvements area and then draw the future state map. It exists only one future state map for each current state.

32. In a store there are 5 people waiting in line for the payment. There are 2 cash counters and the service rate of each cashier is 2 people every 10 minutes. Each cashier has its own queue. What is the queue configuration?

(1 Point)

- ☐ 2M/M/2
- ☐ 2M/M/1
- ☐ M/M/5
- ☐ M/M/2

33. During SMED:

(1 Point)

- ☐ Products are batched in order to reduce setups
- ☐ Internal activities are moved to the beginning or to the end of setup procedure
- ☐ External activities are moved to the beginning or to the end of setup procedure
- ☐ Setup activities are automatized

34. Choose the only correct answer regarding the customer behavior in a queuing system modeling.

(1 Point)

- ☐ Reneging is when a customer decides not to enter a queue because it's already too long
- ☐ Rejecting is when a customer decides to exit the system because she doesn't respect acceptance requirements
- ☐ Reneging is when a customer already in queue gives up the service and goes away without being served
- ☐ Balking is when a customer already in queue gives up the service and goes away without being served

35. Which characteristic belongs to a single queue with respect to multiple queue?

(1 Point)

- ☐ More service diversification
- ☐ More variability in the system
- ☐ Balking actions are less frequent
- ☐ Less variability in the system


36. According to KDAM (Key Decisional Area matrix), DHL transport services belongs to cluster

(1 Point)

- ☐ Service project
- ☐ Service factory
- ☐ DIY service
- ☐ Service partnership

37. Which is the most probable decision you can find if a company decide to drive digital transformation through lean principles:
(1 Point)

- ☐ Automations in order to exploit new technologies for increasing capacity.
- ☐ HMI technologies in order to improve flexibility of operators.
- ☐ RFID technologies in order to track real time product status.
- ☐ Machine learning for planning in order to reduce number of setups.

38. In the HQ case, which of the following is not a consistent "structural choice" according to the new market? 
(1 Point)

- ☐ Low automation grade
- ☐ Mono-impression moulding in order to ensure lower setup times.
- ☐ Increasing the production capacity in order to absorb demand variability.
- ☐ Small number of big production machines in order to ensure machine saturation.