

1. **WHICH MANAGERIAL AND ORGANIZATIONAL ELEMENTS STRENGTHEN THE CONCEPT OF SHOULDICE?**
 - ☒ Presentation on the surgery held by the medical staff to patients and the possibility for the patients to meet both employee and other patients in the canteen to share experience
 - ☐ Making patients wait a long time before being accepted by the hospital (long queue) in order to make them aware of the value of the service provided
 - ☐ Being able to provide the hernia surgery in the day hospital (short and predictable time)
 - ☐ Frequent interviews to patients not satisfied by other hospitals in better defining operations
2. **IN THE HQ CASE, WHICH LEVER SHOULD YOU IMPLEMENT IN ORDER TO IMPROVE COST PERFORMANCE?**
 - ☐ Increase capacity in order to absorb variability through extra-capacity
 - ☐ Split production capacity in many small machines
 - ☒ Launch production of big batches in order to reduce setups
 - ☐ Decrease automation grade
3. **WHEN INTRODUCING A PRIORITY OF ONE CUSTOMER TYPOLOGY OVER ANOTHER, THE THROUGHPUT TIME OF A SYSTEM**
 - ☐ Increases only if non pre-emptive priority
 - ☐ Increases only if pre-emptive priority
 - ☒ Remain unchanged
 - ☐ Increases regardless of priority type
4. **HOW WOULD YOU COMPUTE "UNCERTAINTY"?**
 - ☐ The difference between the average value and the actual value
 - ☐ The difference between the average value and the forecasted value
 - ☒ The difference between the actual value and the expected value
 - ☐ None of the previous
5. **THE IMPACT OF HEIJUNKA BOX IS OF**
 - ☐ Creating continuous flow
 - ☒ Reducing the bullwhip effect
 - ☐ Increase safety stocks
 - ☐ Reducing setups
6. **DECAF CONDITIONS ANALYSIS SUPPORTS MANAGER IN**
 - ☐ Increasing availability of a cell
 - ☐ Defining optimal level of stocks
 - ☐ Improving planning of production
 - ☒ Understanding gap for creating continuous flow

7. **WHICH OF THE FOLLOWING SENTENCES ABOUT THE FUTURE STATE MAP IS WRONG?**
- ☒ Once you draw the current state map, you must find improvements area and then draw the future state map is exists only one future state map for each current state
 - ☐ You need define (1) material flow, (2) information flow and (3) timeline
 - ☐ 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
 - ☐ The aim of future state map is to reduce the overall process lead time of the company
8. **AN APPAREL SHOP WANTS TO DETERMINE BY YM THE NUMBER OF DRESSES TO BE ORDERED FOR THE NEXT SEASON COLLECTION. CONSIDER THAT DRESSES ORDERED BUT NOT SOLD AT THE END OF THE SEASON ARE ALL SOLD BY LOWERING THE PRICE BY 50% FROM 400 €/PC TO 200 €/PC (THE PURCHASE COSTS 250 €/PC), WHICH VALUE IS $P(X < S)$?**
- ☐ 0,33
 - ☐ 0,67
 - ☐ 0,5
 - ☒ 0,75
9. **INVESTING IN CROSS-TRAINED EMPLOYEES SUPPORTS COMPANY IN:**
- ☐ Reducing demand variability
 - ☒ Making capacity more flexible
 - ☐ Increase time-buffer for customer
 - ☐ Increase overall capacity
10. **WHICH IS THE MOST PROBABLE DECISION YOU CAN FIND IF A COMPANY DECIDE TO DRIVE DIGITAL TRANSFORMATION THROUGH LEAN PRINCIPLES**
- ☐ Automations in order to exploit new technologies for increasing capacity
 - ☒ IoT for making data available to operators for taking decision
 - ☐ Investments in real time scheduling
 - ☐ Supplier visibility on forecasts, orders and inventories in order to anticipate stock-ou
11. **WHAT ARE THE “PROS” OF LAGGING STRATEGY FOR CAPACITY MANAGEMENT?**
- ☒ Lower impact from overestimating demand, low production costs, high plant utilization
 - ☐ Lowe impact from overestimating demand, spare part capacity, faster response time
 - ☐ Higher impact from underestimating demand, longer response time, lower delivery reliability
 - ☐ Lower impact of uncertainly and unforeseen and low production costs
12. **FOR A LOCAL FLIGHT IN ITALY ONE CAN BUY A 14-DAY ADVANCE PURCHASE FARE FOR ONLY 49 EURO; THE REGULAR FULL PRICE FOR LOCAL FLIGHT IS 60 EURO. ON AVERAGE ALL TYPE OF PASSENGERS BUY DIRECTLY ON THE FLIGHT A BRIOCHE THAT COSTS 3 € AND COFFEE FOR 2 €; CHOOSE THE CORRECT ANSWER:**
- ☒ $Co = 49 + 2 + 3 = 54$
 - ☐ $Co = 49$
 - ☐ $Co = 49 - 2 - 3 = 44$
 - ☐ $Co = 49 - 2 + 3 = 50$
13. **YOU ARE A MANAGER OF A RESTAURANT; IF YOUR SERVICE PROCESS (OUTPUT) IS AFFECTED BY VARIABILITY, WHICH LEVER DO YOU INVEST IN?**
- ☐ Reservation system
 - ☐ Promotion
 - ☒ Standardization of activities

- ┘ Increase customer participation in the process
14. **CONSIDER A MANUFACTURING COMPANY PRODUCING SHIRTS AND DEFINE WHICH ACTIVITY IS VALUE-ADDING:**
- ┘ Perform a quality control on the color of the shirt before the delivering to the customer
- ☒ Sew the buttons on the shirts
- ┘ Bring the toolkit to the right place
- ┘ Clean the stations
15. **IN THE HQ CASE, WHICH IS THE MOST SIGNIFICANT PERFORMANCE TO COMPETE THE CONSOLIDATED MARKET?**
- ┘ Time (speed)
- ☒ Price
- ┘ Quality (design)
- ┘ Quality (conformity)
16. **WHICH CHARACTERISTIC BELONGS TO A SINGLE QUEUE WITH RESPECT TO MULTIPLE QUEUE**
- ┘ More service diversification
- ┘ More variability in the system
- ┘ Balking actions are less frequent
- ☒ Less variability in the system
17. **INSERTING A LAST-MINUTE TICKET, A COMPANY ADOPTING YIELD MANAGEMENT**
- ☒ Increasing the protection level
- ┘ Decreasing the protection level
- ┘ Increasing both protection level and seats for discounted rate
- ┘ Not impacting on protection level
18. **SAILOR SPA PRODUCTION PROCESS IS MADE BY 5 STAGES WITH THE FOLLOWING EPE: EPE(S1)=2,14 DAYS; EPE(S2)=0 DAYS; EPE(S3)=2,51 DAYS; EPE(S4)=1,42 DAYS; EPE(S5)=0,66 DAYS. WHICH IS THE FREQUENCY ACCORDING TO WHICH SAILOR SPA IS ABLE TO PRODUCE THE WHOLE VOLUME AND MIX REQUIRED BY THE CUSTOMER:**
- ☒ Every 2,51 days
- ┘ Every 1,346 days
- ┘ It depends on the volume and mix required by the customer
- ┘ Every 0,66 days
19. **WHICH CHARACTERISTIC BELONGS TO A PROFESSIONAL SERVICE SHOP**
- ┘ Attention to price
- ☒ Attention to customer specific requirements
- ┘ Attention to quantity
- ┘ Process innovation
20. **WHICH TYPE OF COMPANY CAN BENEFIT FROM IMPLEMENTING YIELD MANAGEMENT?**
- ┘ Only companies that provides a service to customer
- ┘ Companies belonging to specific industries that have fixed capacity and want to maximize their profit
- ☒ Any kind of companies able to segment the segment the market, that have fixed capacity and perishable inventory, high capacity change cost, uncertain demand and the possibility to sell/book product in advance

- └ Only service companies able to segment the segment the market, that have fixed capacity and perishable inventory, high capacity change cost, uncertain demand and the possibility to sell/book product in advance
- 21. CONSIDERING A R&D DEPARTMENT LED BY LEAN INNOVATION CONCEPTS, WHICH IS THE MOST PROBABLE CONTEXT YOU CAN FIND**
- └ Pushing for perfect learning, launching product on the market only when all the features are completed
 - └ Pushing for fast learning through many small iterative projects
 - └ Pushing for fast learning with very big teams in order to have more resources on the same project
 - └ Teams working at the same time on more projects in parallel
- 22. IN THE HQ CASE, WHICH OF THE FOLLOWING IS NOT CONSISTENT DECISION ACCORDING TO THE CONSOLIDATED MARKET**
- └ Meeting the demand according to MTS logic
 - └ Customer base made of few big customers
 - └ Incentives system based on quality conformance and delivery speed objectives
 - └ Work procedures strictly recommended
- 23. RANK ORDER CLUSTERING IS A LEAN PRACTICE FOR:**
- └ Reducing set-ups
 - └ Identifying wastes
 - └ Defining product families
 - └ Creating the pull
- 24. DURING SMED**
- └ Setups activities are automatized
 - └ Internal activities are moved to the beginning or to the end of setup procedure
 - └ External activities are moved to the beginning or the end of setup procedure
 - └ Products are batched in order to reduce setups
- 25. WHICH CHARACTERISTIC BELONGS TO A PERFORMANCE THAT IS CLASSIFIED AS ORDER WINNER**
- └ Company's price performance is very good
 - └ It is a company's base level offering
 - └ The performance defines the competitive advantage of the company
 - └ If company's performance gets better, the company orders remain unchanged
- 26. ROLE OF THE "DELIBERATE STRATEGY" IN THE OPERATIONS STRATEGY OF A COMPANY IS:**
- └ To exploit opportunities emerging from the field in turbulent environment
 - └ To define a clear line to take many little good choices
 - └ To reach the gap with premium class competitors
 - └ To define investment in new technologies
- 27. IN A MULTIPLE QUEUEING SYSTEM, WHICH ARE THE BENEFITS OF CENTRALIZATION OF BACK-OFFICE ACTIVITIES?**
- └ Shortening of lead-time
 - └ Increasing on flexibility
 - └ Higher specialization
 - └ Increasing customization

28. CARGO SPA PRODUCES GLASSES (D=1000 PIECES/DAY) AND IT WANTS TO HAVE AT MAXIMUM 5000 PIECES/SUPERMARKET. WITH WHICH FREQUENCY THE SUPPLIER SHOULD DELIVER RAW MATERIAL
- ☒ Every 5 day
 - ☐ Every 3,33 days
 - ☐ Twice a day
 - ☐ Twice per working week (week = 5 days)
29. WHICH STRUCTURAL ELEMENTS STRENGTHEN THE CONCEPT OF SHOULDICE?
- ☐ Double rooms for patients, meeting rooms (as tea rooms or TV rooms), special stairs, surgery rooms with U shape (as manufacturing cells)
 - ☒ Double rooms for patients, meeting rooms (as tea rooms or TV rooms) and meeting rooms with employees and patients within the canteen
 - ☐ Surgery rooms with U shape with reinforce the teamwork concept among medical staff
 - ☐ Special stairs designed ad hoc, which enable patients to recover fast from hernia surgery
30. LINUS COMPANY WORKS FOR 900 MIN/DAY AND THE DAILY DEMAND OF PRODUCT FAMILY "A" IS 2000. THE PACKAGING DEPARTMENT IS DEDICATED TO THE PRODUCT FAMILY A AND IT IS ABLE TO PACK THE PRODUCT IN 12 DIFFERENT COLOURS. THE CYCLE TIME OF THIS STAGE IS 20 SEC WHILE THE TIME TO CHANGE THE COLOUR OF THE PACKAGING TAKES 4 MINUTES. THE DEPARTMENT IS 100% AVAILABLE. ESTIMATE THE EPE OF THE PACKAGING:
- ☒ 0,206
 - ☐ 0,052
 - ☐ -0,403
 - ☐ 1,234
31. WITH PRE-SHOP POOL AND WORKLOAD CONTROL PLANNING, THE COMPANY:
- ☒ Reduces WIP and shop-floor time
 - ☐ Controls the production and reduces necessity operators
 - ☐ Reduces setups
 - ☐ Immediately release production orders to shorten lead-time