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theory_questions_plus_answers samples from the exam

Operations management (Politecnico di Milano)

1.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).
-Double rooms for patients, meeting rooms (as tea room or TV room) and meetings with employees and patients within the canteen.
-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.

2.In a multiple queueing system, which are the benefits of centralization of back-office activities?
(1 Point)
-Shortening of lead-time
-Increasing of flexibility
-*Higher specialization
-Increasing customization

3.Which of the following sentences about the future state map is wrong?
(1 Point)
-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.
-You need to 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 the future state map is to reduce the overall process lead time of the company.

4.Imagine that you have a production process where there are two parallel flows (press and cutter). What will you consider for drawing your timeline?
(1 Point)
-I will compute the overall time length of both paths, once passing through the press and once passing through the Cutter. I will consider the longest path for my timeline (in terms of stage, as well as of upstream and downstream supermarkets).
-*I will consider for my timeline the longest CT for the two parallel stages while for the downstream supermarkets, the one with higher number of stocked piece.
-I will consider for my timeline the stage with the highest EPE.
-I will consider for my timeline the shortest CT for the two parallel stages while for the downstream supermarkets, the one with lower number of stocked piece.

5.Which characteristic belongs to a professional service shop compared to a mass service?
(1 Point)
-Attention to price
-*Attention to customer specific requirements
-Attention to quantity
-Process innovation

6.Linus company works for 900min/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 20sec while the time to change the colour of the packaging takes 4min. The department is 100% available. Estimate the EPE of the packaging.
(2 Points)
- 0,206   2000*20*X + 12*4*60=900*60*X >>>>>> T.prod + T.setup = T.available
- 0,052
- -0,403
- 1,324

7.Which is the longest time in an operations system?
(1 Point)
-*Throughput time
-Value adding time
-Cycle time
-Not-value adding time

8.The role of the "deliberate strategy" in the operations strategy of a company is:
(1 Point)
-to exploit opportunities emerging from the field in turbolent 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

9.Name and Surname
Mostafa Hassan Wahba Hassan Wahba

10.Considering a R&D department led by Lean Innovation concepts, which is the most probable context you can find:
(1 Point)
-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 projects.
-Teams working at the same time on more projects in parallel.

11.Which type of company can benefit from implementing Yield management?
(1 Point)
-Only companies that provide a service to customers.
-Companies belonging to specific industries (example transportation or entertainment) that have fixed capacity and want to maximise their profit.

-*Any kind of companies able to segment the market that have fixed capacity and perishable inventory, high capacity change cost, uncertain demand and the possibility to sell/book products in advance.
-Only service companies able to segment the market that have fixed capacity and perishable inventory, high capacity change cost, uncertain demand and the possibility to sell/book products in advance.

12.Investing in cross-trained employees supports company in:
(1 Point)
-Reducing demand variability
-*Making capacity more flexible
-Increase time-buffer for customers
-Increase overall capacity

13.During SMED:
(1 Point)
-Setup 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 to the end of setup procedure >>>>>
-Products are batched in order to reduce setups

14.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

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

-Company's price performance is very good
-It is 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

16.Inserting a last-minute ticket, a company adopting yield management is
(1 Point)
-*Increasing the protection level
-Decreasing the protection level
-Increasing both protection level and seats for discounted rate
-Not impacting on protection level >>>>

17.The impact of Heijunka box is of:
(1 Point)
-Creating continuous flow
-*Reducing bullwhip effect
-Increase safety stocks
-Reducing setups

18.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 materials?
(1 Point)
-Every 5 days >>>
-Every 3,33 days
-Twice per day
-Twice per working week (week = 5 days)

19.Personal Code (8 digits)
10717515

20.In the HQ case, which of the following is not a consistent decision according to the consolidated market?

(1 Point)
-Meeting the demand according to MTS logic.
-*Customer base made of few big customers.
-Incentives systems based on quality conformance and delivery speed objectives. >>>>
-Work procedures strictly recommended.

21.DECAF conditions analysis supports manager in:
(1 Point)
-Increasing availability of a cell
-Defining optimal level of stocks
-Improving planning of production
-*Understanding gap for creating continuous flow

22.Rank Order Clustering is a Lean practice for
(1 Point)
-Reducing setups
-Identifying wastes
-Defining product families >>>
-*Creating the pull

23.With Pre-Shop-Pool and workload control planning, the company
(1 Point)
-Reduces WIP and Shop-floor time
-Controls the production and reduces necessity operators
-Reduces setups
-*Immediately releases production orders to shorten lead-time

24.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.
-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-outs

25.In the HQ case, which is the most significant performance to compete the consolidated market?
(1 Point)
-Time (speed)
-Price >>>>
-Quality (design)
-*Quality (conformity)

26.When introducing a priority of one customer typology over another, the throughput time of a system
(1 Point)
-increases only if non pre-emptive priority
-*increases only if pre-emptive priority
-remains unchanged
-increases regardless of priority type

27.An apparel shop wants to determine by yield management the number of dresses to be ordered for next spring-summer collection. Consider that dresses ordered but not sold at the end of the season are all sold by lowering the selling price by 50%, from 400€/u to 200€/u (the purchase cost is 250 euro per unit), which value is P(X<S)?
(2 Points)
-0,33
-0,67
-*0,5
-0,75

28.What are the "PROs" of lagging strategy for capacity management?
(1 Point)

-<mark>Lower impact from overstimating demand, low production costs and high plant utilisation</mark> >>>
-Lower impact from overstimating demand, spare part capacity and faster response time
-*Higher impact from underestimating demand, longer response time and lower delivery reliability
-Lower impact of uncertainty and unforseen events and low production costs

29.You are a manager of a restaurant; if your service process (output) is affected by variability, which lever do you invest in?
(1 Point)
-*Reservation system
-Promotion
-<mark>Standardization of activities</mark> >>>>
-Increase customer participation in the process

30.For a local flight in Italy one can buy a 14-day advance-purchase fare for only 49 euros. The regular full fare price for local flight is 60 euros. On average, all type of passengers buy directly on the flight a brioche that costs 3 euros and coffee for 2 euros. Choose the correct answer
(1 Point)
-Co=49+2+3=54
-<mark>*Co=49</mark>
-Co=49-2-3=44
-Co=49-2+3=50

31.In the HQ case, which lever should you implement in order to improve cost performance?
(1 Point)
-Increase capacity in order to adsorb variability through extra-capacity.
-Split production capacity in many small machines.
-<mark>*Launch production of big batches in order to reduce setups.</mark>
-Decrease automation grade.

32.How would you compute "uncertainty"?
(1 Point)
-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.

33.Which managerial and organizational elements strengthen the concept of Shouldice?
(1 Point)
-Presentation on the surgery held by the medical staff to patients and the possibility for the patients to meet both employees 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 day hospital (short and predictable time).
-Frequent interviews to patients not satisfied by other hospitals in better defining operations.

34.Sailor Spa production process is made by 5 stages with the following EPEs:
EPE (S1) = 2,14 days; EPE (S2) = 0; 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?
(1 Point)
-Every 2,51 days >>>> Max EPE in the system
-Every 1,346 days
-*It depends on the volume and mix required by the customer.
-Every 0,66 days

35.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

36.In a grocery store, there are 4 people waiting in line for the payment. There are 3 cash counters and the service rate of each cashier is 2 people every 10 minutes. The clients are served by the three cashiers following a FIFO approach in one single line. What is the queue configuration?
(1 Point)
-3M/M/3
-M/M/4
-3/M/M/1 >>>>
-*M/M/3