the score of these answers is 25/30

OPS. MAN. EXAM - 21/12/23 - MCQ Prof. Portioli

- Choose the correct answer for each question - just one answer is the correct one
- You do not lose points if you choose a wrong answer
- You have 35 minutes to submit from the opening of this form
- Check the time and Submit before the deadline, the starting time and submitting time arestored automatically by the system
- This is NOT an open book exam, you cannot use your notes, books, slides of the course orsurf the internet
- You are not allowed to communicate with others during the exam

1. Input Your Personal Code (the 8-digit one) *

2. Input your Surname *

3. Input your Name *

Will be reviewed

the score of these answers is 25/30

4. Lean and digitalisation *

- [x] Successful companies adopt lean management before digitalising their processes
- [ ] Companies that deeply embrace lean management do not need digitalisation
- [ ] Successful companies digitalise their processes and they implement Lean to improve them
- [ ] Companies that deeply embrace digitalisation, do not need lean management

Will be reviewed

5. Which one of the following statements on Takt Time referred to a product family is true: *

- [ ] It is not affected by dedication parameter
- [x] It dictates the pace to the production flow
- [ ] It is based on customer demand that is something that you can change
- [ ] It is affected by change-over, downtime and the availability of the product family

Will be reviewed

6. Consider a company that works in fast-food industry. For that company, price is qualifier, quality of specifics is order winner and delivery speed is order loser. Which is the most appropriate lever? *

- Improving quality of the food
- Investing in automation
- Centralization of back-office activities
- Investing in extra-capacity

Will be reviewed

7. In a preemptive priority queue, what is the main advantage of allowing higher-priority tasks to interrupt lower-priority tasks? *

- It improves the overall system throughput time
- It minimizes the waiting time for high-priority tasks.
- All of them are advantageous
- It ensures fairness in task execution

Will be reviewed

8. Operations capabilities are classified as "externally supportive" if they... *

- [ ] Are as good as competitors
- [ ] Are clearly the best in industry
- [ ] Redefine industry expectations
- [x] Hold the organisation back
- [ ] **Will be reviewed**

9. In HQ case, on which performance does the choice of investing in a small number of big machines impact ? *

- [ ] Lower flexibility of plan thanks to lower number of required setups.
- [x] Higher speed (time) thanks to shorter cycle time.
- [ ] Higher price thanks to low number of employees needed.
- [ ] Higher quality of design thanks to better settings of machines.

Will be reviewed

10. Italian airline is adopting 3 classes, Premium rate for 1000 €, executive rate for 800 € and economy rate for 500 €, with a protection level of 150 seats. The company decided to adopt the economy rate a s a last minute price ticket.What would happen to the protection level *

- [ ] Not impacting on protection level
- [ ] Decreasing the protection level
- [ ] Increasing both protection level and seats for discounted rate
- [x] Increasing the protection level

Will be reviewed

11. Company-A is a system integrator and is performing for time delivery an average of 12 days . Most part of competitors delivers as 15 days. The market is evolving and requires 10 days for time delivery. Integration are sold to industrial machine producers, an industrial machine on average takes 2 weeks for being designed and 1 month for being completed. *

- in the current condition, time delivery is not a significant KPI for increasing competitiveness time delivery is a competitive advantage for competitors
- Company-A is in a safe position because Company-A delivers faster than most part of competitors.
- Competitors should hurry on improving time delivery performance for grasping market share to Company-A

Will be reviewed

12. Observing the output of a system there is always variability: *

- Common causes are the ones that are managers' responsibility
- Common causes are the ones that it is key to eliminate
- Common causes are the ones that are employees' responsibility
- Common causes are the ones that are indicating that the product is out of specifications

Will be reviewed

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

- (●) Schnay company does not have enough capacity to fulfill demand volume and mix
- ( ) 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

Will be reviewed

14. Choose the one correct answer: *

- ( ) Cost of Underestimation represents the lost revenue associated with reserving too few seats as discounted fare
- ( ) Cost of Underestimation represents the lost profit associated with reserving too few seats as discounted fare
- ( ) Cost of underestimation represents the cost of reserving too many seats at full fare. As if the empty full-fare seat could have been sold at the discounted price.
- (●) Cost of Underestimation represents the lost revenues associated with reserving too few seats as full fare

Will be reviewed

15. If a production stage has an EPE equal to 3 days, having a total number of different item to process equal to 6, which is the correct following statement: *

- The production stage works with a batch size equal to 2 pieces
- The customer has to wait 3 days for the 6 items
- The production stage needs 2 days to produce the items
- The production stage could perform 6 set-ups every day

Will be reviewed

16. Calculate the revenues of an event knowing that it can hold up to 500 participants, Full price=200€, Discounted price=100€, PL=240, and full price ticket holders get to have as a gift a gadget at the day of the event that costs 15€. *

- R=200X+(500-240)*100
- R=(200-15)X+(500-240)*100
- R=200*240+100*(500-240)
- R=(200+15)X+(500-240)*100

Will be reviewed

17. Cutting in half setup time (resource stop time) and batch size on a resource, causes the following direct effect/effects: *

All of the effects above

- (●) Decreases average inventory level and reduces response time of the resource
- ( ) Decreases average inventory level
- ( ) Increases quality conformance

Will be reviewed

18. The assembly stage of a company is composed of three operators that work on parallel. Each operator performs the whole assembly of the components to produce the final product. The whole assembly process takes 100 minutes. Which one of the following statement is false? *

- ( ) The cycle time of the assembly stage is 100/3 minutes
- ( ) The total work content to produce 10 final products is 1000 minutes
- ( ) In the timeline of the VSM current State the VA time is 100 minutes
- (●) In the timeline of the VSM current State the VA time is 100/3 minutes

Will be reviewed

19. Shuldice hospital is facing an increase in demand that is not able to fulfill with the actual capacity. Which are the possibile alternatives? *

Hiring new doctors and staff to increase the internal capacity of the hospital.

- (●) Extending the doctors working hours or working on saturdays with already existing staff or opening a second clinic (even outside Canada).

Having a mismatch between demand and capacity is done on purpose, so thus no alternatives are evaluated.

Increasing the interanal capacity (extending doctors working hours, opening on saturdays, hiring new doctors), opening a second clinic (even outside Canada) or starting a collaboration with other clinics.

Will be reviewed

20. Calculate the Cost of an event knowing that it can hold up to 300 participants, Full price=250€, Discounted price=100€, PL=200, a rental of the building of 10000€ and the 60% of full price ticket holders will donate 20 € for charity *

- C=300X+(500-200)*150+0.5*40*200
- C=10000
- C=300*250+(500-200)*150+0.6*40
- C=300X+(500-200)*150+0.5*40*X

Will be reviewed

21. The system works 9 hours/day with double shifts and daily demand is 150 units. The range variety is 15 items, all requested every day. Having a Cycle time equal to 12 min/piece and a change over time equal to 5 min with an availability equal to 90%, which one of the following statement is FALSE: *

- The system batch the production of each single item
- The company can fully satisfy the demand in volume
- The total time devoted to set-up in a day is equal to 75 minutes
- The firm cannot satisfy the demand

Will be reviewed

22. In the shop there are four servers available to serve the customers entering the shop. The first customer that will arrive, will be the first one to be served. Select the best option describing the system. *

- The prioritization rules can best describe the system
- There are not enough information to describe the system
- The system is an M/M/4
- The system is a 4/M/M/1

Will be reviewed

23. There are 9 vending machines that work in parallel by receiving the customer with a FIFO logic. Each resource is able to serve 3 customer in 10 minutes and on average there are 25 customers per hour arriving. What is the ρ of the system? *

3/(25*10/60)=0,72

- 3*9/(25*10/60)=6,48
- (9*3*10/25)/20=0.54
- 25/18=1,39

Will be reviewed

24. Which of the following statements is one of the assumptions of an M/M/c model? *

- All the assumptions stated are not valid for M/M/c system
- Arrivals are dependent of preceding arrivals and the arrival rate does not change over time.
- Arrivals are served on a last-in, first-served basis.
- Service times follow the normal probability distribution.

Will be reviewed

25. Choose the correct answer regarding the psychology of waiting *

- Perception=Satisfaction=Expectation
- Satisfaction=Perception-Expectation
- Satisfaction=Expectation-Perception Satisfaction=Perception+Expectation
-

Will be reviewed

26. In the cutting stage is a cell where currently there are 4 operators employed to perform four different manual tasks which take respectively 7 min, 4min,

6min and 4min. The cutting stage is based on 3 shifts of 8hours each. The product daily demand is 200 pieces. Determine whether the number of operators can be reduced in order to save a resource for other value-added activities *

- Only 2 operator are necessary to address the overall work-content
- The cell requires 4 different operators to address each of the four activities
- The cell needs all the 4 operators to address the overall work-content
- The cell needs 3 operators to address the overall work-content. The fourth operator can be employed in another stage

Will be reviewed

27. For a local event one can buy 20-day advance ticket for only 670 €. The regular full fare price for the ticket is 1299. The participants of the event will be offered a buffet for 78 per person, the dinner expenses are provided by a local sponsor. *

- Cu=1299-670-78=551
- Cu=1299
- Cu=1299-670=629
- Cu=1299-670+78=707

Will be reviewed

28. Lean organisations are characterized by *

- (●) flat organisation composed by many small teams, high level of power delegation to people
- ( ) flat organisation composed by few large teams, high level of power delegation to team officers
- ( ) 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

Will be reviewed

29. How would you define the Heuristic EMSR method? *

- ( ) 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 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.
- ( ) 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.

Will be reviewed

30. What are the goal of Lean Management ? *

- Reduce waste
- Foster improvement
- Increse delivery speed
- Reduce inventory

Will be reviewed

31. Hag Spa produces valves and works with 3 shifts (Ta=1080 min/day). The average demand is 500 valves/day. There are two production stages, decoupled by stocks. The first stage availability is 60% while the second has an availability equal to 100%. Cycle time on the first stage is 30 min/valve while on the second stage 60 min/valve. Which is the production capacity of the decoupled line? *

- 1,2 valves/hour
- 1 valve/hour
- 2 valves/hour
- 1,25 valves/hour

Will be reviewed

32. Ocean Drive Hotel is one of the main accommodation facilities of the Atlantic Coast in Ireland. After the usual end-of-the-year meetings of the directors, it

has emerged that the profit was not aligned with the ones expected. In fact, it seems that several times the hotel rooms remain empty, even though the no-show rate is 0%. The company decided to conduct a market analysis and from this it has emerged that the demand for the hotels in this area is higher than the capacity of the whole set of accommodation facilities, but sometimes prices are very high and customers prefer to go in the neighborhood. By knowing these facts, what do you suggest to the board of Ocean Drive Hotel? *

- ○ Introduce Overbooking
- ◉ Introduce discounted Last Minute Tickets to fulfill the rooms
- ○ More data are needed to answer this question
- ○ It is clear that customer classes are several so Heuristic EMSR is needed

Will be reviewed

33. Pear company works for 1350 min/day to fulfill a demand of 800 smartphones/day. The assembly department is 80% dedicated to the smartphone line and it is able to process the product in 3 different sizes. The cycle time of this stage is 1 min while the time to change the size is 10 min. The department is 90% available. Estimate the EPE of the packaging. *

- ○ 0.14
- ○ 0.21
- ◉ 0.16
- ○ 0.29

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