

**202223 BACHELOR IN BUSINESS ADMINISTRATION OPERATIONS MANAGEMENT. CONTINUOUS EVALUATION EXERCISE - LESSON 7 Group: PROFESSOR: Emilio Camarena**

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please mark the option you believe to be correct – there is only one correct answer per question. Each correct answer will be credited with 0.6 points, and each wrong answer will result in a deduction of 0.3. The exercise is worth 3 points. The total rating of the quiz is 10 points.

- 1) Among the techniques used in the JIT approach are:
  - a. Empowered and cross-trained employees, as well as small batches.
  - b. Statistical process control and many job categories.
  - c. Small batches and many suppliers.
- 2) JIT consists of manufacturing quality products in small batches. By reducing the size of orders, the number of orders increases and:
  - a. Order issuing or order preparation costs are reduced.
  - b. Inventory levels and warehousing costs are reduced.
  - c. Holding and ordering costs increase.
- 3) The time spent from the placement of a purchase or production order, until the product is received in the warehouse is called:
  - a. Cycle time.
  - b. Release time.
  - c. Lead time.
- 4) The reorder point is:
  - a. The average stock in hand.
  - b. The optimal order quantity.
  - c. The stock level that, depending on the lead time assumed, triggers a purchase order.
- 5) Among the basic JIT (just in time) objectives, we can find:
  - a. The accumulation of inventory in each phase of the supply chain.
  - b. To show the fundamental problems in production, to reduce waste and to look for simplicity,
  - c. As large as possible product batches.

**EXERCISE Nº 1 (7 points)**

Quants, Inc's flagship product, was sold at an average price of €13.27 /unit in 2022, with total sales of €329,813 in this year. A total of 11 production orders were issued, with total setup costs of €3,520.

For 2023, the prospect is a 3 per cent increase in production units and the product will be produced intermittently in a new section at a rate of 228 units per day. Setup costs will be as per 2021 and the holding cost is €0.8 per unit and quarter.

For the analysis period of one year (2023: 224 working days), the following is requested:

- 1) Calculate the most economic order quantity. (3.5 points)
- 2) Calculate the cycle time, with both sub-cycle times and maximum stock. (1.5 points)
- 3) Calculate the reorder point if the production department needs 5 days' notice to set up the machine. (1 point)
- 4) Draw the model and show its parameters. (1 point)