Operational Performance Optimization Systems

Consider the testimonials of these Operations Managers and indicate the performance optimization system used in their operations.

**Question 1.** "Before this spring, we stocked $2 million in inventory parts in our warehouses. We’ve switched over to a system where we get parts in the right time to assemble them for customer orders. We’ll save a lot of money on warehouse leases and idle parts."

A. MRP  
B. ERP  
C. JIT  
D. Lean

The correct answer to number 1 is letter C, JIT.

**Question 2.** "If a step in a process doesn’t add value to the product or its delivery, we don’t do it."

A. MRP  
B. ERP  
C. JIT  
D. Lean

The correct answer to number 2 is letter D, Lean.

**Question 3.** "Now that we use one database that brings together the data from materials, distribution, purchasing, and everyone, we’ve become so much more coordinated."

A. MRP  
B. ERP  
C. JIT  
D. Lean

The correct answer to number 3 is letter B, ERP.

**Question 4.** "We got this new software system that tells us exactly every part we need for every product we are making at that time. It even takes into account the parts we already have."

A. MRP  
B. ERP  
C. JIT  
D. Lean
The correct answer to number 4 is letter A, MRP.

**Economic Order Quantity**

**Question 5.** Calculate the optimal order quantity to minimize the cost of holding inventory and the cost of placing orders, given the following for one of your company’s materials.

Total annual demand (in units) is D. The cost of placing an order is Co (in dollars). The cost of holding inventory, Ch, is the cost of holding one unit in inventory of one year.

The formula for EOQ is the square root of two times D times cost, divided by Ch.

Monthly demand is 100 units. Cost of placing an order is $50. The value is 200 per unit. The inventory holding cost is 10% of the item. Multiply by 12 to convert monthly to annual.

The answer to question 5 is 77.46 (units per order).

**Question 6.** Under what demand conditions will your EOQ calculations be useful?

The answer to question 6 is EOQ requires fairly even demand—not lumpy.

**Question 7.** If this EOQ (or any EOQ) is too high, what is one thing you can do to reduce it?

Work to decrease the ordering cost, perhaps through making procedures uniform or implementing an "electronic data interchange system with suppliers."

**Reference:**