OSM311 Review Questions
(Chapters 3, 5, 13, and 15)

1. Which would not generally be considered as a feature common to all forecasts?
   A) assumption of a stable underlying causal system
   B) Actual results will differ somewhat from predicted values.
   C) Historical data is available on which to base the forecast.
   D) Forecasts for groups of items tend to be more accurate than forecasts for individual items.
   E) Accuracy decreases as the time horizon increases.

2. Which is not a characteristic of simple moving averages applied to time series data?
   A) smoothes random variations in the data
   B) weights each historical value equally
   C) lags changes in the data
   D) requires only last period's forecast and actual data
   E) is more responsive to changes when \( n \) is small

3. A forecast based on the previous forecast plus a percentage of the forecast error is:
   A) a naive forecast
   B) a simple moving average forecast
   C) a centered moving average forecast
   D) an exponentially smoothed forecast
   E) an associative forecast

4. The purchasing perspective of the supplier as a partner is characterized by:
   A) an emphasis on low prices
   B) one or a few suppliers
   C) low flexibility
   D) 100% inspection for quality
   E) low volume

5. Examination of the function of purchased parts or materials in an effort to reduce costs and/or improve performance is called:
   A) vendor analysis
   B) value analysis
   C) negotiated purchasing
   D) reverse engineering
   E) disintegration

6. Which of the following is a barrier to integration of separate organizations in the supply chain?
   I. conflicting objectives of the companies in the chain.
   II. different level of capacity of the companies in the chain.
   III. reluctance of the organizations in the chain to allow other organizations access to their data.
   A) I only
   B) I and II
   C) II and III
   D) I and III
   E) I, II and III

7. Which of the following is not a benefit of effective supply chain management?
   A) lower inventory costs
   B) higher productivity
   C) shorter lead times
   D) greater customer loyalty
   E) all of the above are benefits

8. If average demand for an item is 20 units per day, safety stock is 50 units, and lead time is four days, the ROP will be:
   A) 20
9. The need for safety stocks can be reduced by an operations strategy which:
   A) increases lead time
   B) increases lead time variability
   C) increases lot sizes
   D) decreases ordering costs
   E) decreases lead time variability

10. An operations strategy which recognizes high carrying costs and reduces ordering costs will result in:
    A) unchanged order quantities
    B) slightly decreased order quantities
    C) greatly decreased order quantities
    D) slightly increased order quantities
    E) greatly increased order quantities

11. Which one of the following statements about capacity is best?
    A) Capacity is the average rate of output for a facility.
    B) Short-term capacity plans deal with investments in new facilities and equipment.
    C) Businesses find large cushions appropriate when demand varies.
    D) The utilization rate is expressed as the ratio of maximum output rate to effective capacity.

12. Given the following information, the efficiency is:
    Effective capacity = 80 units per day
    Design capacity = 100 units per day
    Utilization = 48%

13. Which one of the following is not generally a determinant of the reorder point?
    A) rate of demand
    B) length of lead time
    C) lead time variability
    D) stockout risk
    E) purchase cost

14. In the basic EOQ model, if annual demand doubles, the effect on the EOQ is:
    A) It doubles.
    B) It is four times its previous amount.
    C) It is half its previous amount.
    D) It is about 70 percent of its previous amount.
    E) It increases by about 40 percent.

15. The EOQ model is most relevant for which one of the following?
    A) ordering items with dependent demand
    B) determination of safety stock
    C) ordering perishable items
    D) determining fixed interval order quantities
    E) determining fixed order quantities
Problems:

1. As an inventory manager you must decide on the order quantity for an item. Its annual demand is 300 units. Ordering cost is $40 each time an order is placed, and the unit holding cost is $1. What order quantity would you recommend based on the following price schedule.

<table>
<thead>
<tr>
<th>Order quantity</th>
<th>price per unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0~149</td>
<td>$ 6</td>
</tr>
<tr>
<td>150~199</td>
<td>$ 5</td>
</tr>
<tr>
<td>200 or more</td>
<td>$ 4</td>
</tr>
</tbody>
</table>

2. Demand = 30 units/week (assuming 52 weeks per year)
Ordering cost = $50/order
Holding cost = $8/unit/year
Lead time = 1 week
Standard deviation of weekly demand = 8 units
Desired cycle service level = 90%

a) Design a continuous review system for this item, making Q equal to the EOQ. What is the desired value for Q?

b) Design a periodic review system, with P = 5 weeks. What target inventory T would provide the desired 90% service level?