Part – A (compulsory) 32 marks

Q.1. Fill in the blanks. (Do not reproduce the statement) 8 marks
i) _______________ takes care of fluctuations in demand and lead time.
ii) HML analysis divides an organizations inventory into three classes based on __________ 
    __________
iii) Inventory used to run operations independently is called ________ inventory.
iv) Completed products which are awaiting dispatch to customers are called __________ 
    inventory.
v) Assuming no safety stock and average daily consumption of 100 units and a lead time of 5 
    days the reorder point will be ________.
vi) Time series analysis is a ______________ forecasting method.
vii) Waste is something that does not add __________
viii) _________ spares have high reliability and may not fail during the life of the equipment.

Q.2. State True or False (Do not reproduce the statement) 8 marks
i) MRP is a type of inventory in manufacturing organizations.
ii) Trend projection is an example of time series method of forecasting.
iii) The philosophy of JIT is elimination of inventory.
iv) The average inventory in P model is higher than Q model.
v) Stock out costs are easy to calculate compared to surplus stock costs.
vi) Time bucket in MRP refers to a time period, such as a week, two-week period, etc.
vii) Ordering cost is calculated by dividing the total order value divided by the number of orders.
viii) For an air conditioner manufacturing unit the demand for compressor is independent.
Q.3. Expand the following  8 marks

i) WIP
ii) JIT
iii) MPS
iv) BOM
v) VED
vi) MAD
vii) ROP
viii) EOQ

Q.4. Match A and B  8 marks

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Periodic review</td>
<td>a) Product structure tree</td>
</tr>
<tr>
<td>ii) Cycle counting</td>
<td>b) Forecast accuracy</td>
</tr>
<tr>
<td>iii) ABC analysis</td>
<td>c) Shelf life</td>
</tr>
<tr>
<td>iv) Lead time</td>
<td>d) Closed loop</td>
</tr>
<tr>
<td>v) BOM</td>
<td>e) Time triggered</td>
</tr>
<tr>
<td>vi) Mean error</td>
<td>f) Verify inventory records</td>
</tr>
<tr>
<td>vii) PQR</td>
<td>g) Pareto law</td>
</tr>
<tr>
<td>viii) Feedback to plan</td>
<td>h) Indent to receipt</td>
</tr>
</tbody>
</table>

PART - B

Write any three (3) of the following questions – 16 marks each  (48 Marks)

Q.5  a) What is the role of inventory in an organization?
     b) Explain various costs associated with inventory.

Q.6  a) Briefly explain the various inventory replenishment systems?
     b) What are the steps involved in ABC classification?

Q.7  Write short notes on any four
     a) Safety stock
     b) Inventory accuracy
     c) Reorder point
     d) Service level
     e) Forecast error
Q.8  a) What is EOQ? What are its limitations? What are the assumptions used in deriving EOQ formula.

Q.9  Differentiate between (Any two)
   a) Under stocking cost and over stocking cost
   b) ABC analysis and XYZ analysis
   c) MRP and MRP II
   d) Dependent demand and independent demand

Q.10  Eliminating wastages is the centre of JIT. Identify sources of waste in your organization and suggest methods to eliminate or reduce them.

**PART – C**

Q. 11  Compulsory  (20 marks)

Office Force is a stationery supplier to Unique Consultants. One of their popular products is notepads. Office Force offers the following quantity discount structure based on how many dozen notepads are ordered.

<table>
<thead>
<tr>
<th>Ordering slabs</th>
<th>Price per dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-19 dozens</td>
<td>Rs 21.95</td>
</tr>
<tr>
<td>20-99 dozens</td>
<td>Rs 19.95</td>
</tr>
<tr>
<td>100-199 dozens</td>
<td>Rs 18.95</td>
</tr>
<tr>
<td>200 +</td>
<td>Rs 17.95</td>
</tr>
</tbody>
</table>

Unique Consultants would like to decide how many notepads to order using the EOQ model for quantity discounts. Its ordering cost is Rs 35 per order; its anticipated demand in the coming year is for 1500 dozen notepads. Its annual carrying cost rate is 40 percent of acquisition cost.

a) How many dozen notepads should Unique Consultants order each time?

b) What should be the resulting total inventory cost per year?

c) How many orders per year should be placed?

d) What is the average inventory level?

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