INDIAN INSTITUTE OF MATERIAL MANAGEMENT  
Post Graduate Diploma in Materials Management  
Graduate Diploma in Materials Management  

Paper 8  
Operations Management  

Date : 16.06.2009  
Time : 10.00am To 1.00pm  
Max. Marks :100  
Duration : 3 hrs  

Note:  
1. Part A contains 4 main questions (with 8 sub questions). Each question carries 1 mark.  
   Total 32 marks  
2. Part B – Answer any 3 question out of 5 questions. Each question carries 16 marks.  
   Total 48 marks  
3. Part C is compulsory and it is a case study.  
   Total 20 marks.  

Part A  

Q1: State true or false.  
   a. In least square method, the sum of square of deviations of various points from line of fit is minimum.  
   b. MRP is useful for reducing inventory.  
   c. Demand is always probabilistic in nature.  
   d. TPM methodology deals with improving breakdown time.  
   e. JIT is push type system.  
   f. Operation strategy guides decision making in all phases of manufacturing.  
   g. ERP is not useful for all departments to work in harmony.  
   h. X & R chart is useful for variable data.  

Q2. Fill in blanks.  
   a. JIT system operates with very low ___________.  
   b. Planned maintenance is an organized maintenance work carried out as per ______.  
   c. BOM stands for ___________.  
   d. EOQ stands for ___________.  
   e. The analysis of determining strength and weakness of company is called as ___________.  
   f. MTBF stands for ___________.  
   g. PDCA stands for ___________.  
   h. There are generally _______ phases for project management.  

Q3. Match the following.  

<table>
<thead>
<tr>
<th>Column “A”</th>
<th>Column “B”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. JIT</td>
<td>A Quality aspects</td>
</tr>
<tr>
<td>2. TQM</td>
<td>B Environmental aspects</td>
</tr>
<tr>
<td>3. ISO 9000</td>
<td>C Total quality management</td>
</tr>
<tr>
<td>4. SCM</td>
<td>D Zero inventory concept</td>
</tr>
<tr>
<td>5. MPS</td>
<td>E Zero profit</td>
</tr>
<tr>
<td>6. BEP</td>
<td>F Enterprise resource planning</td>
</tr>
<tr>
<td>7. ISO 14000</td>
<td>G Master production schedule</td>
</tr>
<tr>
<td>8. ERP</td>
<td>H Extending value chain</td>
</tr>
</tbody>
</table>

Q4: Expand the following terms.  
   1. MRP I  
   2. BPR  
   3. TPM  
   4. ABC  
   5. JIT  
   6. PERT  
   7. CPM  
   8. SBU
PART : B

Q5: Write short notes on following (Any four)
   i. Kanban system
   ii. Acceptance sampling
   iii. Principles of JIT
   iv. PERT
   v. Aggregate planning
   vi. MRP II
   vii. Quality circles

Q6  a) Explain objectives of operation management.
    b) Compare production planning with production control.

Q7  a) Explain MRP system
    b) Explain various sampling plans.

Q8  a) Explain various types of maintenance
    b) There are seven jobs which are to be pressed on machine I and then on
       machine II. Processing time in hrs. are given below

<table>
<thead>
<tr>
<th>job</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>m/c I</td>
<td>6</td>
<td>24</td>
<td>30</td>
<td>12</td>
<td>20</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>m/c II</td>
<td>16</td>
<td>20</td>
<td>20</td>
<td>13</td>
<td>24</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

Find optimum sequence and total elapsed time

Q9  a) Explain need for demand forecasting? How it differs from prediction.
    b) Explain various methods of forecasting.

PART : C - Compulsory

Q10: Aditya enterprises is using a raw material which is consumed in large quantities
     during production.
     The mean weekly demand = 300
     Standard deviation of weekly demand = 30
     Unit cost of raw material = Rs 300
     Ordering cost = Rs 500 per order
     Carrying cost = 25 % per annum.
     The purchase department has indicated that the lead time for procurement of this
     raw material is 2 weeks. Past experience with the supplier suggests that there is
     no certainty with respect to the lead time. The organization has been using EOQ
     for the purpose of scheduling orders. However, there is general feeling that it is
     not working satisfactorily. It is not uncommon for the organization to experience
     stock outs.
     Workout the parameters of the P & Q system of inventory control.

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