Date: 15.12.2015
Time: 10.00 a.m. to 1.00 p.m.
Max. Marks: 100
Duration: 3 Hrs.

Instructions:
1. From Part A – answer all questions (compulsory). Each sub question carries 1 mark. Total: 32 Marks
2. From Part B – Answer any 3 questions out of 5 questions. Each sub-question carries 16 marks. Total: 48 Marks
3. Part C is a case study (compulsory) with questions. Read the case study carefully and answer the questions. Total: 20 Marks
4. Please read the instructions given in the answer sheet.

Part – A
32 Marks
(Append all questions Each sub question carries 1 mark)

Q. 1 State True or False (Write S. No. and answer)
   i) Production means a process of converting some form of inputs to some form of output.
   ii) Productivity means more production.
   iii) If we follow any one of the several Demand Forecasting models, it is sufficient for the business.
   iv) Batch production is low volume low standardization.
   v) Good lighting and ventilation are included in the Factor’s act.
   vi) Master production schedule specifies what end products are to be produced and when.
   vii) Bill of materials means the document of monetary amount to be paid for the materials purchased.
   viii) Line of balance and Balancing lines is same.

Q. 2 Fill in the blanks (Write only what is being filled up with S. No.)
   i) Low volume and low standardization are typical of --------type of production system.
   ii) For Plant Location --------theory gives two alternatives –Primary and secondary.
   iii) Human factor engineering is called -----------.
   iv) Capacity Planning is an integral part of -----------.
   v) Production based on Market Demand in known as ----------type.
   vi) The system capacity is governed by the facility having ----- capacity.
   vii) MRP II stands for ----------.
   viii) Better utilization of resources will lead to better ----------.
Q. 3  Match the following  (Write  only S. No. and Alphabets )

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PERT</td>
<td>A   Material Handling</td>
</tr>
<tr>
<td>2. Standard Hours</td>
<td>B   Scheduling</td>
</tr>
<tr>
<td>3. Productivity</td>
<td>C   Demand forecast</td>
</tr>
<tr>
<td>4. Ventilation</td>
<td>D   Plant layout</td>
</tr>
<tr>
<td>5. Johnson’s Rule</td>
<td>E   Time study</td>
</tr>
<tr>
<td>6. Fork lift</td>
<td>F   Net working</td>
</tr>
<tr>
<td>7. Aisle</td>
<td>G   Output to input ratio</td>
</tr>
<tr>
<td>8. Moving average</td>
<td>H   Building design.</td>
</tr>
</tbody>
</table>

Q. 4 Expand the following  :-

i) PPC  ii) MTM  iii) BEP  iv) EOQ
v) FMS  vi) ASRS  vii) CAD  viii) ERP

Part – B  48 marks
(Answer any 3 questions out of 5 questions. Each sub-question carries 16 marks.)

Q. 5  a) Describe at least 4 methods of Demand Forecasting.
      b) Discuss why any one method of Demand forecasting will not give right results in today’s business environment.

Q. 6  a) Explain how PPC can improve productivity .
      b) Draw a typical Factory Layout indicating position of various departments and facilities like canteen, crèche, parking ,DG set A.C. Plant, Transformer etc.

Q. 7  a) Why scheduling is important ? Discuss.
      b) Sequence the following jobs using John’s Rule :

<table>
<thead>
<tr>
<th>Time taken is in hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  B  C  D  E  F</td>
</tr>
<tr>
<td>Machine 1  6  4  5  7  3  8</td>
</tr>
<tr>
<td>Machine 2  4  6  2  7  8  5</td>
</tr>
</tbody>
</table>

Q. 8  a) Describe focus Manufacturing.
      b) Explain in brief the Purchase procedure.
Q. 9 Write short notes on any FOUR of the following:

i) Lean Manufacturing
ii) TPM (Total Productive Maintenance)
iii) Statistical Quality Control.
iv) Learning Curve
v) Scientific Inventory Control.
vi) Waste elimination.
vii) Concept of Drum Buffer Rope.

Part – C

Q. 10 Case study: (compulsory) 20 marks

Gama Industries is a medium scale industry manufacturing various components for number of industries. It has got a well established PPC department. Amongst others, they are supplying components to Godrej, Mahindra etc., worth about Rs. 3 Crores. The plant is running with 90% utilization. The sequencing is by Least Slack method. Suddenly there is additional demand from Godrej, which will require 20% capacity. They can take up the work in 3 ways.

a) Working overtime – rate being 3 times daily wages.

b) Outsourcing which will be at 1.2 times the cost of the job.

c) Working in additional shift – requires men and utilization will be only 20%.

Which works out to 1.5 times the cost.

As an expert, please suggest:

i) Whether usual system be broken for Godrej and why?

ii) Will working overtime be proper? Why?

iii) Whether additional shift working will be suitable?

iv) Can the work be given on Outsourcing? Alternately can this work be taken up and some other jobs be given on outsourcing?

************