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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. – Mechanical Engineering

Semester End Examination; Dec. - 2014

Production Management

Time: 3 hrs

Max. Marks: 100

Note: Answer any **FIVE** full questions, selecting at least **TWO** full questions from each part.

PART - A

- 1.a Trace the evolution of the modern production management thought 10
- b. Explain the tools and techniques of production Management that helps in improving productivity 10
- 2.a What is product life cycle? What are the different product strategies adopted during the different stages of the product life cycle. 10
- b. Bring out the differences between process focused organizations and product focussed organization, Give suitable examples 10
- 3.a List the different qualitative and quantitative methods of forecasting used in industry. Also write a note on Delphi Technique 10
- b. Alpha company has the following sales pattern during 2003 to 2011. Compute the sales forecast for 2012 using linear regression 10

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sales (in lakhs)	6	8	11	23	29	34	40	45	56

- 4.a What are the factors affecting plant location? Explain 6
- b. Distinguish between product and process layout with suitable example 6
- c. List the various techniques available for solving plant location problems. Explain rank positional weight method of solving the same 8

PART - B

- 5.a Explain the different types of production plans 10
- b. What is aggregate planning? Bring out the different aggregate planning strategies 10
- 6.a What is Master schedule? Bring out the steps in developing a Master schedule 10
- b. The processing times (hours) for 6 jobs on three machines are given in the following table

JOB	1	2	3	4	5	6
M ₁	3	12	5	2	9	11
M ₂	8	6	4	6	3	1
M ₃	13	14	9	12	8	13

The jobs are processed on the three machines according to the order M₁, M₂, M₃. Obtain the optimal sequence using Johnson's Rule. Also determine the total elapsed time. 10

7.a Ten jobs are to be assigned to four machines. The processing times of jobs on the four machines are as shown below:

JOB	1	2	3	4	5	6	7	8	9	10
M/C A	10	18	17	16	12	16	12	15	25	18
M/C B	15	20	21	17	20	22	NP	18	30	25
M/C C	14	22	25	24	17	19	18	16	27	29
M/C D	12	27	28	25	NP	28	22	20	35	32

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NP – Not Possible

Assuming the total number of hours available on each machine is 65 hours, solve the machine loading problem using indexing method.

- b. List at least four commonly used commercial loading and scheduling devices 4
- 8. a. Discuss the advantages and limitation of centralized and decentralized dispatching system 10
- b. List and explain the basic methods of progress reporting 10

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