

Code No: E5206

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

MBA - II Semester Examinations, February 2011

PRODUCTION AND OPERATIONS MANAGEMENT

Time: 3 hours

Max. Marks: 60

Answer any five questions

All questions carry equal marks

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1. a) Define Production and Operations Management (POM). State its objectives.
b) Explain the current scenario of POM.
2. a) State the considerations are to be made for process selection.
b) Explain the fast diagram of value analysis taking a wooden pencil as example.
3. a) Suppose you are interested to start cement industry, list out the factors to be considered for identifying the location of considered industry.
b) Distinguish between process layout and product layout.
4. a) Define an aggregate production plan. State its objectives.
b) Vultex Fibers produces a line of sweat clothes that exhibits a varying demand pattern. Given the following demand forecast, production costs and constraints, design a production plan for Vultes using the transportation method of LP. Also calculate the cost of production plan.

Period	Demand
September	100
October	130
November	200
December	300

Max. Regular production 100 units/month

Max. Overtime production 50 units/month

Max. Subcontracting 50 units/month

Regular production costs Rs.10/unit

Overtime production cost Rs.25/unit

Subcontracting cost Rs.35/unit

Inventory holding costs Rs.5/unit/month

Beginning inventory 0.

5. a) Find the sequence that minimizes total elapsed time (in hours) required to complete the following jobs on three machines M_1 , M_2 and M_3 in that order. Also calculate minimum makes pan time.

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Machines \ Jobs	A	B	C	D	E
M ₁	8	3	7	2	5
M ₂	3	4	5	2	1
M ₃	8	7	6	9	10

- b) Explain the features of various charts used in Line of Balance (LOB).
6. a) Define method study. State its objectives.
b) Write a formula for determining the standard time by Work Sampling. Discuss the advantages of Working Sampling over time study.
7. a) Explain operation of single and double sampling plans. State the advantages of double sample plan over single sampling plan.
b) Explain the basic steps in gaining ISO 9001 registration.
8. A project is composed of time activities whose time estimates are given below:

Activity	Activity times		
	Optimistic time	Most likely time	Pessimistic time
1-2	5	8	17
1-3	7	10	13
2-3	3	5	7
2-4	1	3	5
3-4	4	6	8
3-5	3	3	3
4-5	3	4	5

- a) Draw the network and expected project duration.
b) Determine the probability that the project will be completed in 28 days or less.
