

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

CLASS: BE
BRANCH: BT/MECH/PROD/CIVIL/EEE

SEMESTER : VII
SESSION : MO/18

SUBJECT: PE7005 COMPETITIVE MANUFACTURING STRATEGIES

TIME: 3:00 HRS.

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) What is liberalization of market? [2]
 Q.1(b) How resources and capabilities of a firm are useful for creating a cost or differentiation advantage? [4]
 Q.1(c) What is WTO? What are the major provisions of the WTO agreement? [6]
- Q.2(a) What is Bus modularity? [2]
 Q.2(b) What are the basic criteria for evaluation the performances of vendors? [4]
 Q.2(c) How increasing the product verity gives competitive advantages to a firm? What are the various issues faced in managing product variety? [6]
- Q.3(a) What is agile manufacturing? [2]
 Q.3(b) What fundamental changes are required to make an industry into JIT (just-in-time) industry? [4]
 Q.3(c) Differentiate between push and pull manufacturing system. Discuss the role of Kanban in pull manufacturing system. [6]
- Q.4(a) "Do the right things, right the first time, every time" - corelate the phrase with TQM. [2]
 Q.4(b) Based on the information provided in the table below prepare the MRP sheet and find out the optimum lot size and ordering schedule using 'Least total cost' lot sizing technique. [10]

Part# =X	Past	OH= 370	LT= 2	SS= 80	AL= 0								
Period	Due	1	2	3	4	5	6	7	8	9	10	11	12
GR		130	160	120	160	130	120	185	115	130	140	150	130
SR			0										

Ordering Cost=		10
Item Unit Cost=		1.5
Annual Holding Cost Rate=		0.25

OH = On hand, LT= Lead time, SS = Safety stock, AL = Allocated, GR = Gross requirements, SR = Scheduled receipt.

- Q.5(a) How simulation helps in improving the competitiveness of an industry? [2]
 Q.5(b) Discuss the Online Transaction Processing (OLTP) and Online Analytical Processing (OLAP) applications of ERP system. [4]
 Q.5(c) Highlight with example the applications of Perception techniques and Intelligent Agents technologies in smart manufacturing. [6]
- Q.6(a) What is the difference between a dedicated FMS and a random order FMS? [2]
 Q.6(b) How Rank Order Clustering Method is used to determine machine requirements in a machining cell? [4]
 Q.6(c) What are the sufficient and necessary conditions for RMS? Justify with examples. [6]
- Q.7(a) What is CIM? [2]
 Q.7(b) Discuss the design and planning of futuristic factories. [4]
 Q.7(c) Discuss the following: [6]
 i) e-manufacturing, ii) Selection of manufacturing systems for different manufacturing scenarios