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

CLASS: BE **SEMESTER : VII**
BRANCH: EEE/MECH/PROD **SESSION : MO/17**

SUBJECT: PE7005 COMPETIVE MANUFACTURING STRATEGIES

TIME: 3. Hours **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.

Q.1(a)	What are the major functions of WTO?	[2]
Q.1(b)	What are the competitive advantages of domestic companies over the multinational companies? Explain with suitable examples.	[4]
Q.1(c)	Discuss the strategic decision areas those comprising a manufacturing strategy.	[6]
Q.2(a)	What is vendor development?	[2]
Q.2(b)	What do you understand by product modularity? How does it give a firm the competitive advantages over its competitors?	[4]
Q.2(c)	What does the term 'design for manufacturability' means? What are the guidelines to design for manufacturability?	[6]
Q.3(a)	What is the use of triangular kanban?	[2]
Q.3(b)	"Agile manufacturing is a vision of manufacturing that is a natural development from the original concept of lean manufacturing" – Justify the comment.	[4]
Q.3(c)	Define the JIT system and explain the basic concept of JIT manufacturing. What are the key pillars of JIT?	[6]
Q.4(a)	"A stitch in time saves nine" – Correlate the comment with TQM.	[2]
Q.4(b)	Given the product structure tree (Fig. 1), the lead time and demand information, provide a materials requirements plan that defines when and how many units of each component will be needed. Lead Times: A - 1 day, B - 2 days, C - 1 day, D - 3 days, E - 4 days, F - 1 day. Demands: Day 10 - 50 A, Day 8 - 20 B (Spares), Day 6 -15 D (Spares). Parts on hand: B - 5, C - 20, D - 12, F – 15. 20 pieces of D are scheduled to arrive in 5th day.	[10]

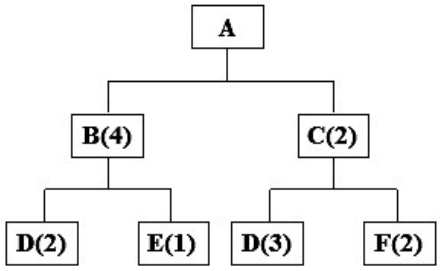


Fig.1

Q.5(a)	What is the difference between stochastic and deterministic simulation models?	[2]
Q.5(b)	Explain the structure of an ERP system by highlighting the applications of its different components like online transaction processing module, online analytical processing module, and bolt-on software.	[4]
Q.5(c)	What is intelligent manufacturing? Classify intelligent system technologies and discuss in brief?	[6]
Q.6(a)	What is cellular manufacturing?	[2]
Q.6(b)	What are the sufficient and necessary conditions for reconfigurable manufacturing systems?	[4]
Q.6(c)	Discuss about the physical components of a flexible manufacturing system.	[6]
Q.7(a)	Highlight the scope of CAD/CAM in CIM.	[2]
Q.7(b)	What are the various elements of CIM? Discuss.	[4]
Q.7(c)	Discuss the design and planning of futuristic factories.	[6]

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