M.E. DEGREE EXAMINATIONS: NOV/DEC 2010

Third Semester

INDUSTRIAL ENGINEERING SYSTEMS

IEE557: Cellular Manufacturing Systems

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. What are the obstacles for group technology?

2. List out the two category of attributes of a parts.

3. What are the methods available for solving problems in Group Technology and cellular manufacturing systems?

4. Differentiate between traditional engineering and concurrent engineering.

5. What is meant by cell stability?

6. Define inter and intera cell layout in GT/CMS.

7. Draw the flow diagram of managerial structure and groups.

8. What is meant by parametric analysis?

9. What are the inputs for MRP?

10. List out the economic benefits and justification in group technology.

PART B (5 x16=80 Marks)

11. a) Briefly explain the traditional manufacturing and cellular manufacturing system layout.

(OR)

b) Discuss the benefits and issues of group technology.

12. a) Describe the various problems in group technology. Explain the methods of solving problems.

(OR)

b) (i)Define rank order clustering algorithm. What are steps involved in rank order clustering algorithm.

(ii) Apply the rank order clustering technique to the part machine incidence matrix in the following table to identify logical part families and machine groups. Parts are identified by letters, and machines are identified numerically.

Machines	A	B	C	D	E	F	G	H	I
1	1			1				1	
2					1				1
3			1		1				1
4		1				1			
5	1							1	
6			1						1
7		1				1	1		

13. a) Briefly explain the application of genetic algorithm and neural network in cellular manufacturing system.

(OR)

b) Explain briefly intra-cell and intercell movement with suitable sketch.

14. a)   Discuss details about batch sequencing and life cycle issues in GT/CMS.

(OR)

b) Explain in detail about integration of GT/CMS in MRP frame work.

15. a) Describe the PBC in group technology /cellular manufacturing system.

(OR)

b) Write short notes on

(i)Conventional Vs group use of computer models in GT/CMS

(ii) Human aspects of GT/CMS

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