Register Number: ……

M.E DEGREE EXAMINATIONS: JUNE2012

Second Semester

INDUSTRIAL ENGINEERING

IEE506: Operations Management

Time: Three hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. Mention any two objectives of operations management.
2. Differentiate between production and operations management.
3. What are the factors affecting forecasting?
4. List out the different approaches to measures of forecast accuracy.
5. What are the basic inputs for MRP?
6. List the functions of master production schedule.
7. A production line operating 450 minutes per day is to have an output of 250 units per day. Find the cycle time.
8. When to use the gantt chart?
9. List out the place where Poka yoke works well.
10. Define OEE.

PART C (5 x 14 = 70 Marks)

11. a) (i) Explain the concept of World Class Manufacturing. (8)

(ii)Explain briefly the different operations strategies used by the organization to achieve their production plan. (8)

(OR)

b) (i) List the techniques and procedures used in operations system (6)

(ii)Discuss about the technology management role in improvement business performance. (10)

12. a) (i) What are the types of demand pattern? Explain them with suitable sketches (8)

(ii) Discuss the steps of Delphi method (8)

(OR)

b) (i) What is exponential smoothing ?. (4)

(ii) A firm uses simple exponential smoothing with α=0.2 to forecast demand. (12)

The forecast for the first week of January was 400 units, whereas actual demand turned out to be 450 units.

(a) Forecast the demand for the second week of January

(b) Assume that the actual demand during the second week of January turned out to be 460 units. Forecast the demand up to February third week, assuming the subsequent demands as 465,434,420,498 and 462 units.

13. a) (i) What do you mean by aggregate planning and list out the different strategies (4)

(ii) A firm has developed the following forecast in units for an item that has a demand influenced by seasonal factors. (12)

Month	Forecast demand	Month	Forecast demand	Month	Forecast demand	Month	Forecast demand
Jan.	220	Apr.	396	July	378	Oct.	115
Feb.	90	May	616	Aug.	220	Nov.	95
Mar.	210	June	700	Sept.	200	Dec.	260

(a) Prepare a chart showing the daily demands requirements

(b) Plot the demand as a histogram and as a cumulative requirement over time

(c) Determine the production rate required to meet average demand and plot this as a dotted line on the graphs

(OR)

b) How do you determine the effective lot size in MRP and explain any three methods in detail.

14. a) Consider the assembly network shown in Fig.1 Which shows the precedence relationship in assembling a product.

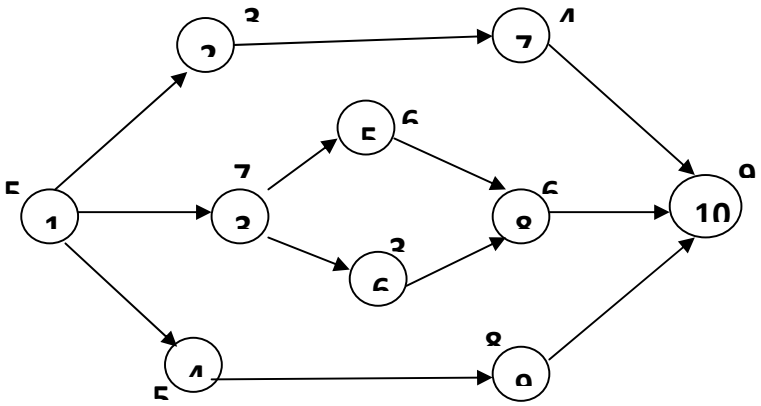

Fig.1

The number by the side each node represents the processing time in minutes. The required production volume in 8-hour shift is 24 completed assemblies. Design an assembly line using RPW method.

(OR)

b) Determine the optimal sequence to minimize the following two machines six jobs flow shop scheduling problem using Johnson's algorithm

Job	Machine number	
	1	2
1	5	4
2	2	3
3	13	14
4	10	1
5	8	9
6	12	11

15. a) (i) Briefly explain the steps which are followed in a kanban system (8)

(ii) List and explain the components of Lean manufacturing (8)

(OR)

b) (i) What are the objectives and benefits of TPM (8)

(ii) Discuss the characteristics of Poka Yoke (8)

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