

2007 SBM OPERATIONS MANAGEMENT Test 2

Time: 50 minutes

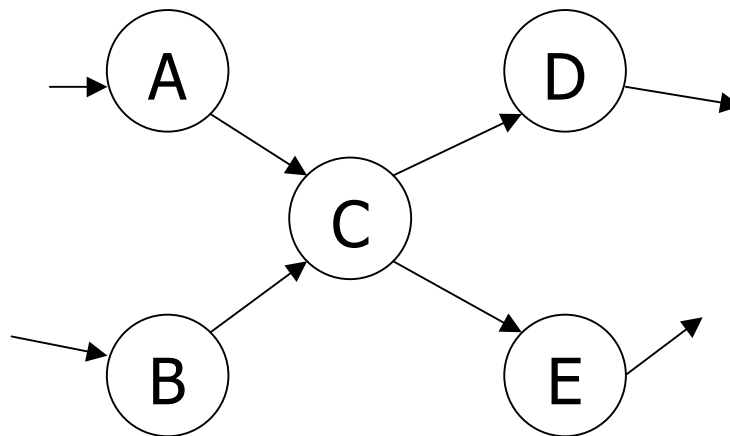
Max marks: 15

1. Explain the reasons for economy of scale. (2 marks)
2. What do you mean by Master Production Schedule? (2 marks)
3. The patients waiting at an operation theatre at the beginning of the day at 7:00hrs are detailed below:

Patient	Time required (hrs)	Due Time (hrs)
Yudhi	3.5	15:00
Bhim	1.0	14:00
Arjun	2.5	10:00
Nakul	2.0	11:00
Sahadev	1.5	9:30

Determine the order in which the jobs should be taken up according to SPT rule, and calculate the average WIP.

4. Explain what do you mean by aggregate planning. (3 marks)
5. A partial network diagram of the relevant activities in a project are given below. (2 marks)



Complete the table giving the earliest start and finish times for all activities.

Activity	Duration	ES	EF	LS	LF
A	4	3			
B	5	4			
C	6				
D	7				25
E	8				24

6. Explain the working of a P system of inventory control with the help of a sketch showing the changes in stock position. (3 marks)
7. MRP is being practiced in a Saucepan manufacturing company. The requirement of handles has been estimated as 1000 for week 1, 1500 for week 3, and 2500 for week 5. There is an initial inventory of 1500. The item has a POQ of 3 weeks with a lead time of 2 weeks. Determine the weeks of planned order releases and the resulting inventory in weeks 1 to 5 for handle. (2 marks)
8. How are jobs scheduled in a JIT system? (3 marks)

(2 marks)

SOLUTIONS TO PROBLEMS:

3.

Patient	Time required (hrs)	Due Time (hrs)	Completion Time (hrs)	Flow Time (hrs)
Bhim	1.0	14:00	8:00	1
Sahadev	1.5	9:30	9:30	2.5
Nakul	2.0	11:00	11:30	4.5
Arjun	2.5	10:00	14:00	7.0
Yudhi	3.5	15:00	17:30	10.5

Average WIP = $25.5/10.5 = 2.429$ patients

5.

Activity	Duration	ES	EF	LS	LF
A	4	3	7	6	10
B	5	4	9	5	10
C	6	9	15	10	16
D	7	15	22	18	25
E	8	15	23	16	24

7.

Item: Handle	Lot size: POQ 3 weeks							
	Lead Time: 2 weeks							
	Week							
	1	2	3	4	5	6	7	8
Gross requirements	1000		1500		2500			
Scheduled receipts								
Projected on-hand inventory (Beg: 1500)	500	500	2500	2500	0			
Planned receipts			3500					
Planned Order release	3500							