

(3Hours)

Total Marks 80

N.B:

1. Question No.1 is compulsory
2. Attempt any three out of remaining questions
3. Draw neat sketches to illustrate your answers
4. Figures to the right indicate full marks.

- Q 1. Write short notes on : 20
- a) Two-bin system
 - b) MRP-I and MRP-II
 - c) Dispatching
 - d) Delphi Method
- Q 2. a) How the size of an organization affects the various factors that influence PPC? 20
- b) Define the terms - lead time, safety stock, reorder point and maximum inventory.
- Q 3. a) Discuss the prerequisites of PPC. 20
- b) Why process planning is needed? Explain Computer aided process planning.
- Q 4. a) Explain 1. Computer integrated process planning, 2. JIT system 20
- b) What is Linear programming? Discuss the areas of applications of Linear programming.
- Q 5. a) Explain any two types of Qualitative forecasting models. 20
- b) Explain the factors influencing scheduling.

- Q 6. a) There are five jobs, each of which must go through machines A, B, and C in the order ABC. Processing times on the machines are given in the following table. 20

Jobs	Processing times (Hours)		
	Machines		
	A	B	C
1	8	5	4
2	10	6	9
3	6	2	8
4	7	3	6
5	11	4	5

Determine the sequence for processing of these five jobs on three machines for which the entire process will be completed in the minimum possible time.

- b) A small project is composed of 7 activities whose completion time estimates are given in the following table. Activities are identified by their beginning and end node numbers.

Activity (i - j)	Optimistic time	Most likely time	Pessimistic time
	to (in weeks)	tm (in weeks)	tp (in weeks)
1-2	1	1	7
1-3	1	4	7
1-4	2	2	8
2-5	1	1	1
3-5	2	5	14
4-6	2	5	8
5-6	3	6	15

- Draw the project network
- Find the expected duration and variance for each activity.
- What is the expected project length
- Calculate the variance and standard deviation of the project length.
