Assignment: # 02 **(Fall 2010)**
Mth601 (Operations Research)
Lecture: 11 – 16

Total Marks = 20
Due date: 22nd November, 2010
INSTRUCTIONS

Please read the following instructions before attempting to solve this assignment

1. In order to attempt this assignment you should have full command on

   Lecture # 11 to Lecture # 16

2. In order to solve this assignment you have strong concepts about following topics

   - ✓ Concept of Network.
   - ✓ Rules for construction of Network.
   - ✓ CPM / PERT.
   - ✓ Floats.

1. Try to get the concepts, consolidate your concepts and ideas from these questions which you learn in Lecture # 11 to Lecture # 16.
2. You should concern recommended books for clarify your concepts as handouts are not sufficient.
3. Try to make solution by yourself and protect your work from other students. If we found the solution files of some students are same then we will reward **zero** marks to all those students.
4. You are supposed to submit your assignment in **Word format** any other formats like scan images, PDF format etc will not be accepted and we will give **zero** marks to these assignments.

Assignments through **e-mail** are not acceptable after due date (If there is any problem in submitting your assignment through LMS, you can send your solution file through email with in due date). ***You are advised to upload your assignment at least two days before Due date.***

Using ABC analysis, classify the items as A, B and C when the following information is known about a group of items.

Item No.	Annual Consumption in Pieces	Unit price in Rs
1	30,000	10
2	280000	15
3	3000	10
4	110000	5
5	4000	5
6	220000	10
7	15000	5
8	80000	5
9	60000	15
10	8000	10

Solution:

Firstly we compute the annual usage value for each item by multiplying the per unit price by the annual use and to rank them in the descending order of their annual usage values.

Item No.	Annual Consumption in Pieces	Unit price in Rs	Annual usage value in Rs.	Ranking
1	30,000	10	3000	6
2	280000	15	42000	1
3	3000	10	300	9
4	110000	5	5500	4
5	4000	5	200	10
6	220000	10	22000	2
7	15000	5	750	8
8	80000	5	4000	5
9	60000	15	9000	3
10	8000	10	800	7

Secondly to accumulate the total no. of items and their usage values and then to convert the accumulated values into the percentages of the grand totals as below;

Item No.	Category	Annual Usage(Rs.)	Cumulative Annual Usage(Rs.)	Cumulative Usage %	% of items
2	A	42000	42000	48	10
6		22000	64000	73	20
9	B	9000	73000	83	30
4		5500	78500	90	40
8		4000	82500	94	50
1		3000	85500	98	60
10	C	800	86300	98.6	70
7		750	87050	99.4	80
3		300	87350	99.8	90
5		200	87550	100	100

It may be noted from the table that the 1st two items have a large annual value, the next four, a moderate annual value and the remaining four, a small annual value. These may be categorized as A, B and C items respectively.

It is also clear that it is necessary to tightly control only 20% of inventory items(the class A) to achieve tight control over 73% of the total annual value of inventories. On other hand, 40% of the items (the class C) can be virtually ignored and still there will be loss of control over only 2% of the total annual value.