MTH601-Midterm (June 7, 2014)

1. The first step in a problem solving exercises in OR is the _____that exist in the system.

Construction of the model of problem

Identification o f the problem

Solution of the problem

None of these

2 .A requirement for the definition of the problem in OR is that _____must be clearly defined which helps to focus attention on what the problem is

Method

Objective

Solution

None of these

3 . In a network flow diagram, time follows from_____

Left to right

Right to left

Any direction

4. The dummy activities consume

No time,no resources

No time but some resources

Some resources in minimum time

All resources in a given time

5. In a national highway system interestion of two or more roads has the same analogy as the _____in the network flow diagram.

Branch

Critical activity

Flow

Node

6. Best possible time estimate that a given activity would take under normal conditions which often exist, is called

Most likely time estimate

Pessimistic time estimate

Smallest time estimate

Activity time estimate

7. In _____, activity time estimates are distributed according to beta distribution

PERT

CPM

Project Network

Float

8. If we have 2,4 and 12 hours as the optimistic(t0) most likely (tm) and pessimistic(tp) then the expected time for the activity would be

7

6

5

4

9. If t0=2 tm=5 and tp=14 then SD=_____

2

4

6

8

10. IF t0=6,tm=12 and tp=18 then Vt=_____

12

2

4

144

11. The graphical method for solving a linear programming problem is applicable when _____

Two variables are involved

Three variables are involved

Any number of variables are involved

None of these

12.

Which of the following is equivalent relation to the constraint x=2 of a linear programming problem?

X≥2

x≤2

x<2 and x≥2

x<2 and X>2

13. While using simplex method for a LPP if there are 4 standard equations in 8 variables then number of non basic variables will be _____

32

12

4

2

14.

X1

X2

R1

R2

15. In the purchasing model without any shortage(Wilsonsmodel) which of the following quatitiy does not vary?

Supply

Demand

Inventory

Transportation cost

16. How many decision variables are involved in the inventory model with shortages?

One

Two

Three

Four

17. Which of the following rule is used in order to minimize the decision variables in any inventory model?

Derivative test

Simplex method

PERT

Graphical method

18.

$R \rightarrow 0$

$R = D$

$R > D$ or $R < D$

$R \rightarrow \infty$

19. ABC analysis depends on the

Quality of materials

Cost of materials

Annual consumption value of materials

Quantity of materials used

Question: (2 marks)
What is linear Programming?

Question: Forgot ☹

Question: (3 marks)
If we increase the inventory, then what would be the proportionate effect on the followings? Give proper reason in each case.
(i) Shortage Cost.
(ii) Ordering or Setup Cost per unit time.
(iii) Holding Cost.

Question: (3 marks)
Put the following program in standard form
$Maximize.\ Z = x + y$

$Subject\ to:$

$$x + 5y \leq 5$$
$$2x + y \leq 4$$
$$x, y \geq 0$$

Question:
Find the initial basic feasible solution to the following linear programming problem,
Maximize $\boldsymbol{Z} = 4\boldsymbol{x} + \boldsymbol{y}$
Subject to
$3\boldsymbol{x} + \boldsymbol{y} = 3$
$2\boldsymbol{x} + \boldsymbol{y} \geq 6$
$\boldsymbol{x} + 2\boldsymbol{y} \leq 3$
$\boldsymbol{x}, \boldsymbol{y} \geq 0$

Question: (5 marks)
Classify the following material items into ABC categories.

Item Number	1	2	3	4	5	6	7
Annual Usage in Rs.	36000	14000	75000	37000	11000	16000	32000

Solved papr of Wet eye

Part 1

Question: (2 marks)

What is linear Programming?

Ans: Linear programming technique can be said to have a linear objective function that is to be (either maximized or minimized) subject to linear equality or unequality constraints and sign reactions on the variables.

Question: Forgot L

Question: (3 marks)

If we increase the inventory, then what would be the proportionate effect on the followings? Give proper reason in each case.

(i) Shortage Cost.
(ii) Ordering or Setup Cost per unit time.
(iii) Holding Cost.

Ans: **(i)** Shortage Cost. **When we increse the inventory the shortage cost will decrease.**
If we hav much inventory then we dont need to giv cost for overtim requirements due to shortage nd also will not bear clerical nd adminitrator expenses.
(ii) Ordering or Setup Cost per unit time. **When we incraese the inventory the ordering cost C2 will also b increased.**
If the items r inventory incrased then tsting nd training costs will also increased.
(iii) Holding Cost. **will increase.**
bcz with high inventory we need to giv tex n insurence also. we hav to mantian the inventory record too.