Roll no:- 41310.

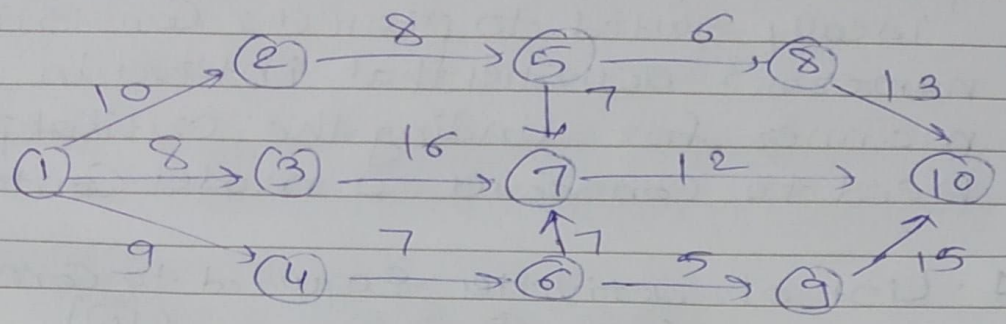
* Assignment OR-2 *

Page No.:
Date:

YOUVA

* Title:- Implementation of Critical path method.

* Problem definition:- Using CPM, determine the Early start and late start of all node points and identify Critical path for the following network Also draw the network Analysis table.



* Objective:- To implement and learn the Critical path method for the given graph. To draw the network Analysis Table for the given graph.

* Outcome:- The students will be able to find the critical path for any given graph using the critical path method.

* S/w and H/w requirements:-
OS-64 bit open source linux or its derivative
Programming language: java/python.
4 GB RAM, CPU, Mouse, Keyboard.

Page No.:
Date:

Theory:-

The critical path method (CPM) is a step by step project management technique for process planning that defines critical and non-critical tasks with the goal of preventing time-frame problems & process bottlenecks. The CPM is ideally suited to projects consisting of numerous activities that interact in a complex manner for finding the critical path we need to construct a model containing

1. List of activities required to complete the project (here ①, ②, ③, ... ⑩).
② the time duration that each activity will take to complete (here the weights given on the edges of the graph.
③ dependencies between the activities (here the edges between only two nodes).
④ Logical end points such as milestones or deliverable items. (here the direction of the arrows on the edges).

Using these values, CPM, calculates the longest path of planned activities to logical end points or to the end of the project, and the earliest and the latest that each activity can start and finish without making the project longer

Page No:
Date:
YOUVA

Critical Path Method:-

* It is used in project Management.
* It shows how earlier project can be Complete.

Inputs:-

1. Activities
2. Duration
3. Precedance relationship

Outputs:-

Early and late start times of all nodes network Analysis table.

major steps of critical path.

1. Identifying the activities.
2. Construction of project network.
3. perform time estimation using forward & backward pass.
4. Identifying the critical path.

Rules for designing the Activity on node network diagram.

1. A project network should have only one start node & one end node.
2. A node has a duration.
3. Links normally have no duration.
4. "precedents" are the immediate preceding activities.

(5) time moves from left to right in project network.
(6) A network should not contain loops.
(7) A network should not contain dangles.

Conclusion:-

Thus we successfully implemented the Critical path Method to find the earliest and latest start times for each node in the given graph. We also wrote the network analysis table.