FAQ's

1. **What is the significance of critical path?**

   (a) It is the longest path in the network; however it is possible for a network to have more than one critical path. The sum of the durations of critical activities along the critical path determines the duration of the project.

   (b) It is the most sensitive path, any change in duration critical activities along the critical path is bound to effect the duration of the entire project.

2. **What is Systematic Analysis?**

   (a) Systematic analysis involves,
   (b) Calculate the time schedule of each activity
   (c) Calculate the time schedule for the completion of entire project
   (d) Identify critical activities
   (e) Determine the critical path for the network

3. **Explain activity float and their types.**

   (a) Non critical activities have some flexibility i.e. these activities can be delayed for some time without affecting the project duration. This flexibility is called as slack in case of an event and as float in case of an activity.

   (b) **Total float of an activity**: Difference between earliest and latest start /finish time for an activity.
      i. **TF_{ij} = LST-EST or TF_{ij} = LFT-EFT**

   (c) Amount of time by which the actual completion of an activity can exceed its earliest expected completion time without causing any delay in the project duration.

   (d) **Free float of an activity:** Determined by subtracting the head event slack from the total float of an activity.
      i. **FF_{ij} = TF_{ij} – (slack of the event j)**

   (e) Free float indicated the value by which an activity in question can be delayed beyond the earliest starting point without affecting the earliest start.

(f) **Independent Float:** Determined by subtracting the tail event slack from the free float of an activity.

i. **IFij = FFij – (slack of the event i)**

Independent float can't be a negative value.

(g) **Interfering float:** Utilization of float in an activity can affect the float of the subsequent activity in the network. Thus interfering float can be defined as that part of the total float which causes a reduction in float of the successor activity.

Difference between the latest finish of the current activity and the earliest start of the following activity, or zero whichever is larger

4. What are CPM benefits and limitations?

CPM Benefits

- Provides a graphical view of the project.
- Predicts the time required to complete the project.
- Shows which activities are critical to maintaining the schedule and which are not.

CPM Limitations

While CPM is easy to understand and use, it does not consider the time variations that can have a great impact on the completion time of a complex project. CPM was developed for complex but fairly routine projects with minimum uncertainty in the project completion times. For less routine projects there is more uncertainty in the completion times, and this uncertainty limits its usefulness.