5. CRASHING

CRASHING: It's an expansion of CPM that considers a compromise between cost & time.

IT CONSISTS TWO TYPE OF COST		
DIRECT COST	**INDIRECT COST**	**TOTAL COST**
It includes cost of labours, materials, etc…	It includes cost of accommodation of labours, etc…	$T.C. = D.C. + I.D.C$

CRASH TIME (T_C):

It's the minimum activity duration to which an activity can be reduced by increasing the direct cost.

Cost-Time slope represents the extra cost of reducing the duration by one-time unit. $Cost - Time\ slope = \frac{C_C - C_N}{T_N - T_C}$	T_C =Crash Time, T_N =Normal Time, C_C =Crash Cost, C_N =Normal Cost,	

STEPS OF CRASHING:

1. In critical path, select the critical activity having maximum cost slope.
2. Reduce the duration of this critical activity by one-time unit prior.
3. Revise the network diagram by adjusting the time & cost of crashed activity.
4. Again, find critical path, project duration & the total cost of project.
5. If the optimum project duration is obtained then stop otherwise repeat from steps.

IMPORTANT POINTS:

1. Crashing is done in critical path & in critical path the activity (Critical) Which is having minimum slope should be crashed first.

2. In crashing,

Direct Cost increases	In-direct Cost decreases	Total Cost decreases	Project duration decreases

3. **Resource Levelling:** Project Duration is fixed + Resource is unlimited.

4. **Resource Smoothening**: Project Duration is unlimited + Resource is limited.