1. Given the following project data, calculate and show:

   The logic network; the Critical path; and the overall % complete of the project, to-date.

Activity	Predecessors	Duration	Cost x $1,000	Actual Percent Complete, to-date
A	----	4	4	100%
B	A	6	3	100%
C	A	2	4	70%
D	A	9	3	50%
E	B	3	4	15%
F	D	7	3.5	----
G	B	8	2	----
H	C, E	2	2	----
I	F	4	4	----
J	G, H, I	2	6	----

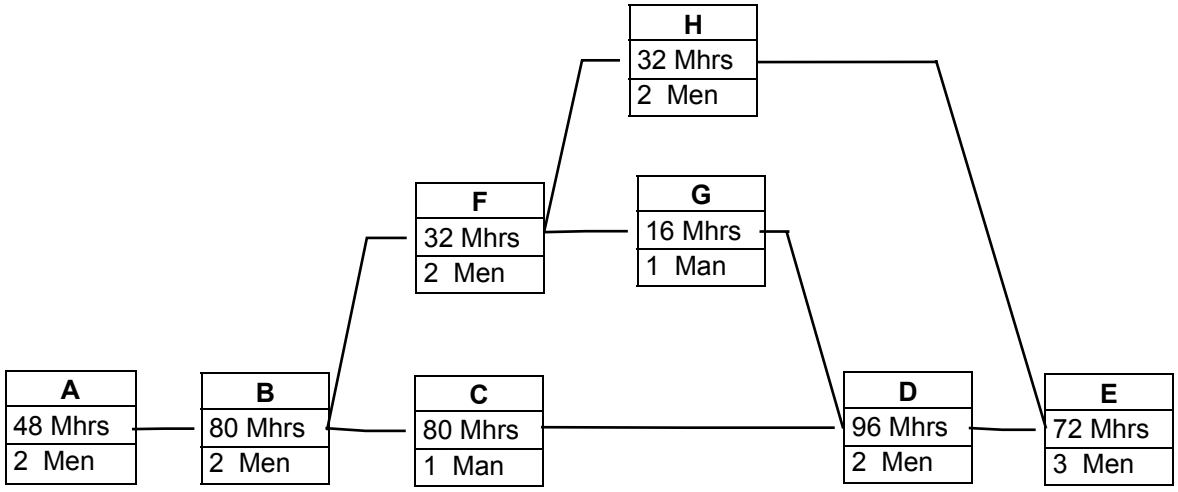
2. The following project is considered:

Activity i – j	Description	Duration (Weeks)	Resources A	Resources B
1 – 2	A	3	4	4
1 – 3	B	4	3	4
1 – 5	C	5	1	3
2 – 4	D	2	1	0
2 – 6	E	3	2	1
3 – 4	F	4	2	2
4 – 7	G	3	3	1
5 – 6	H	6	4	4
5 – 7	I	4	3	2
6 – 7	J	3	1	4

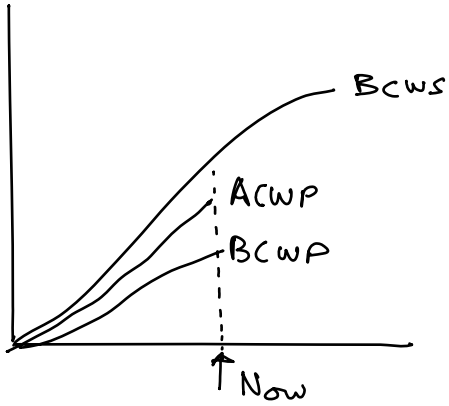
   Develop a schedule using a limit of: seven Resource A and seven Resource B. Use the ELS rule.

3. The following network diagram represents the activities in a single house.

(a) If you are to construct these tasks for 6 houses in 35 days, manually calculate the number of crews that need to be involved in each activity. Draw the schedule of critical activities.



- What is your comment about the cost and schedule performances of a project having the following control curves at current date.



- Two criticisms of PERT technique in dealing with uncertainty in project duration are:

_____

_____

- Briefly explain how the critical chain approach for project control tries to avoid the student syndrome and the delays in projects:

_____

_____

- The difference between forward chaining and backward chaining approaches in the inference engine of an expert system is:

_____

_____

- Explain the difference between crossover and mutation in Genetic Algorithms:

_____

_____

- Assume two linguistic variables (A and B) have identical membership functions as shown below. Express and draw the following expression: (Medium A and Low B)

_____

_____