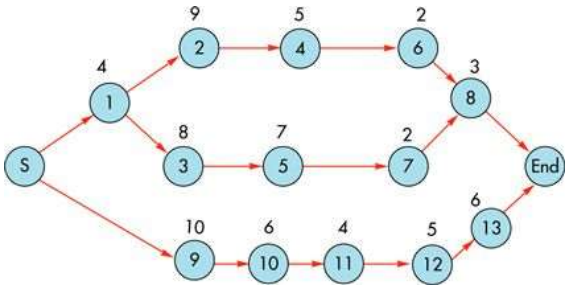
Concordia University
John Molson School of Business

COMM 225: POM

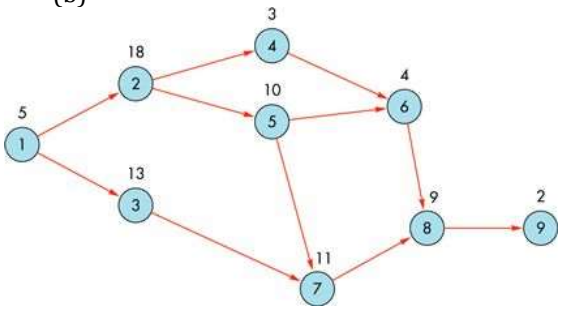
TOPIC 2: PROJECT MANAGEMENT – TUTORIAL QUESTIONS

Q1 (Ref: Q. 17-5, p716-717): For each of the problems listed below, determine the following values for each activity: the earliest start time, earliest finish time, latest finish time, latest start time, and activity slack time. Identify the critical activities, and determine the duration of the project.

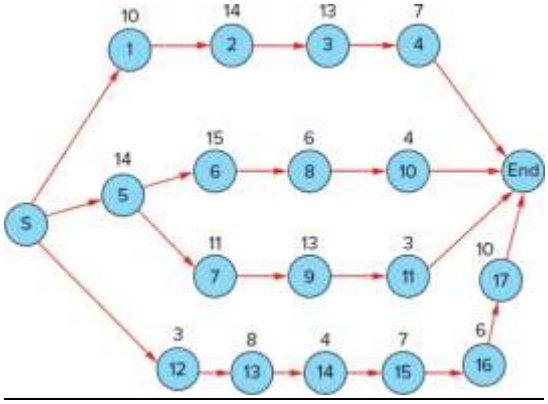
(a)



(b)

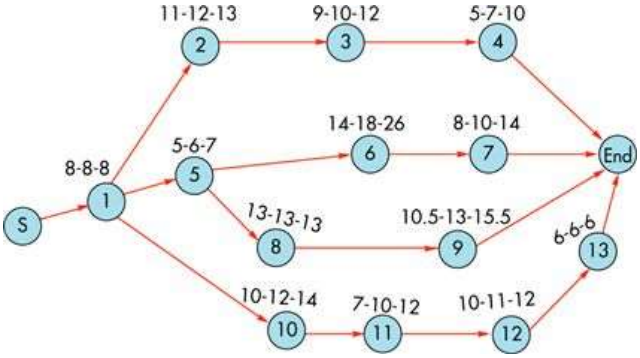


(c)

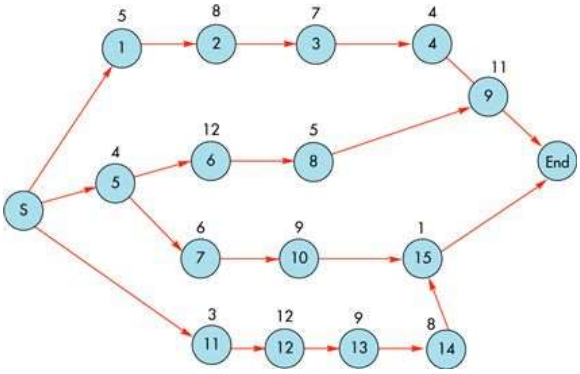


Q2 (Ref: Q. 17-11, p717): The following precedence network display the 3-point estimates for each activity of project. Determine.

(a) The expected duration for each path and its variance.
(b) The probability that the project will require more than 49 weeks.
(c) The probability that the project can be completed in 46 weeks or less.



Q3 (Ref: Q. 17-14, p717-718): A construction project has indirect costs totaling $40,000 per week. Major activities in the project and their expected durations are shown in the following precedence network:



Crashing costs for each activity are:

Activity	Crashing Costs ($000) First Week	Second Week	Third Week
1	$18	$22	$—
2	24	25	25
3	30	30	35
4	15	20	—
9	30	33	36
5	12	24	26
6	—	—	—
8	40	40	40
7	3	10	12
10	2	7	10
15	26	—	—
11	10	15	25
12	8	13	—
13	5	12	—
14	14	15	—

(a) Determine the minimum-cost crashing plan that will take off six weeks from the project duration.
(b) Plot the total cost curve against project duration. What is the optimum number of weeks to crash the project?

Q4 (Ref: Q. 17-17, p719): Use the following activities and their three duration estimates (in days) to do the following:

(a) Determine the expected duration of the project.
(b) Calculate the probability that the project will take at least 18 days.

		Durations		
Path	**Activity**	t_o	t_m	t_p
	a	4	5	6
a-b-c	b	7	8	10
	c	3	5	9
	d	7	8	11
d-e-f	e	2	3	4
	f	1	4	6