Project Management

Quiz 5

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Quiz 5

- Aims
  - To understand the concept of project crashing.
- Expected Outcomes
  - Students are able to expedite the project when necessary.
- References

  - William, R.T. 2013. Project Management. Random Exports
  - Heagney, J. 2012. Fundamentals of Project Management. American Management Association.
  - Richardson and Gary, L. 2010. Project Management theory and practice. Taylor and Francis.

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1. A project as shown in **Table Q1** consists of 12 activities, lettered A through L with optimistic, most likely and pessimistic duration are given to complete it.

Table Q1

		Duration (week)		
Activity	Predecessor	Optimistic	Most likely	Pessimistic
A	-	5	6	7
B	A	1	3	5
C	A	1	4	7
D	B	1	2	3
E	B	1	2	9
F	B	1	5	9
G	F	2	2	8
H	D, E	4	4	10
I	C	2	5	8
J	C	2	2	8
K	H	2	3	4
L	E, F	3	4	5

(a) Construct the project network using AOA.
(b) Find the expected duration and variance for each activity.
(c) Find the critical path and expected project completion time.
(d) What is the possibility of completing the project after 22 weeks?

2. You are considering the decision of whether or not to crash a project based on the information in **Table Q3**. After asking your operation manager to conduct an analysis, you have determined the "pre-crash" and "post-crash" activity, duration and costs.

Table Q3

	Normal	Crashed	
Activity	Cost (RM)	Duration (days)	Cost (RM)
A	4500	3	6300
B	2000	1	3000
C	500	1	2000
D	3500	2	5000
E	750	1	1200
F	2500	2	5000
G	1000	1	2000
H	1400	4	2300
I	1770	1	2890
J	1050	1	2000
K	500	2	750
L	450	2	950

(a) Calculate the per day costs for crashing each activity by considering the result on **Q1 (c)**.
(b) Rank the activities to be crashed.
(c) Calculate the total project costs and project duration after crashing.
(d) Validate your result based on the concept of crashing.

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