

Course No: 5399
 Course Title: Advanced Engineering
 Projects Management
 Date: 2/1/2012
 No. of Questions: (4)
 Time: 2 Hours.
 Using Calculator (Yes)

University of Palestine

 Final Exam
 2nd January 2012
 Total Grade:

Instructor Name: Nadine Abu-Shaaban
 Student No.: _____
 Student Name: _____
 College Name: _____
 Dep. / Specialist: _____
 Using Dictionary (No)

Question One:

- Identify two forms of Procurement Methods used in Contractual Arrangements for the construction work.
- With the aid of diagrams, discuss the main differences between these two forms, and suggest the types of project which may suit them.

Question Two:

A project consists of the following eight activities. The immediate Predecessors and activity time (in weeks) are shown below.

Activity	Immediate Predecessor	Time (Weeks)
A	–	3
B	–	6
C	A	2
D	B, C	5
E	D	4
F	E	3
G	B, C	9
H	F, G	3


- Draw a project Network.
- What is the Critical Path for this Network?
- Can activity G be delayed without delaying the entire project? If so, by how many weeks?
- What is the expected project completion time?

Assume that the project has to be completed in 16 weeks. Crashing of the project is necessary, relevant information is shown below

Activity	Time (weeks)		Cost (\$)	
	Normal	crash	Normal	crash
A	3	1	900	1700
B	6	3	2000	4000
C	2	1	500	1000
D	5	3	1800	2400
E	4	3	1500	1850
F	3	1	3000	3900
G	9	4	8000	9800
H	3	2	1000	2000

- Formulate a Linear Programming Model that can be used to make the Crashing Decision for the Project. (State the Objective Function and Constraints Clearly).

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Question Three:

The Stages in the Risk Analysis and Management of a project are:
Identification, Estimation, Evaluation, Response and Monitoring.

Discuss the following:

- What is meant by Dynamic and Static Risk, illustrate with examples.
- Techniques used for the identification of risks.
- Qualitative and Quantitative Analysis used in risk estimation.
- Response strategies to the risk.

Question Four:

The following estimates of activity times (in days) are available for a small project.

activity	optimistic	Most probable	Pessimistic
A	4	5	6
B	8	9	10
C	7	7.5	11
D	7	9	10
E	6	7	9
F	5	6	7

- Compute the expected activity completion times and variance for each activity.
- An Analyst determined that the critical path consists of activities B-D-F. Compute the expected project completion time and the Standard Deviation for the project.

End of Questions