

題號： 204
科目： 營建管理
節次： 6

國立臺灣大學 112 學年度碩士班招生考試試題

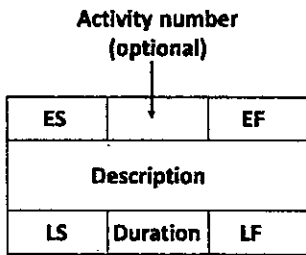
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※ 注意：請於試卷內之「非選擇題作答區」標明題號依序作答。

1. Which contract type is riskier for the contractor, Lump-sum or Guaranteed Maximum Price (GMP)? Why? (2 + 6 points)
2. Please list the three main stakeholders in construction. Explain the contractual relationships between these stakeholders in Design-Bid-Build (DBB) and Design-Build (DB) projects (diagram is preferred). (3 + 12 points)
3. What are the pros and cons of DBB and DB? Which is more suitable for mega projects such as a new Olympic stadium, and why? (6 + 4 points)
4. What is Net Present Value (NPV)? How is it used in construction project management? (2 + 4 points)
5. Spell out WBS and explain why and how it is used in a project.? Please give an example of a WBS for a construction project (at least three levels). (4 + 6 points)

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6. Please draw an Activity-on-Arrow diagram. (Hint: Include Start and Finish activities and follow the provided legend for labeling activities.). (14 points)



Activity	Predecessor	Duration (days)
Start	-	-
A	Start	5
B	Start	2
C	Start	2
D	B, C	4
E	A, B	7
F	A	3
G	E, F	12
H	D, E	6
I	H	3
J	G, I	3
End	J	-

7. For each activity, calculate the Early Start (ES), Late Start (LS), Early Finish (EF), Late Finish (LF), Total Float (TF) and Free Float (FF). Assume the first activity has an early start of "0". Fill out the following table. (15 points)

Activity	Duration	ES	EF	LS	LF	TF	FF	Critical (Y/N)
A								
B								
C								
D								
E								
F								
G								
H								
I								
J								

8. What are the drawbacks of the critical path method (CPM) (list at least two)? How can we improve CPM? (6 + 4 points)

9. Please explain Earned Value Analysis and how it is used in project controls. (6 points)

10. Please list three Personal Protective Equipment for construction safety. (6 points)