

一、問答題（每小題 10 分，共 50 分）

A young engineer, who just graduated from a university with a master degree in construction engineering and management, is trying to start out his brand-new career in Taiwan. While facing intensive competition, constraints, and unknowns, he concluded that there are two alternatives leading to the goal: (i) seek an interesting and promising job; (ii) start over with a firm. Based on these alternatives, several concepts must be understood comprehensively as follows:

1. Change is inevitable in many construction projects. Explain how changes happen in a construction project (5分). Classify change orders based on their features and explain meanings for these classified change orders. (5分)
2. Please define what the feasibility analysis for a construction project is. (5分) Also, a plot is required to illustrate how a typical feasibility analysis to be done. (5分)
3. Project financing is as important as techniques for a construction project. Describe the sources and methods to perform project financing. (10分)
4. Please list four essential documents, making up a construction contract. (3分) What are the entries that an agreement must contain? (7分)
5. A construction firm must involve accounting used to monitor its financial performance. One out of two important accounting documents, balance sheet, here is like a snapshot of the firm's financial condition. Please list the three major components of the balance sheet and also, provide two entries for each component. (10分)

二、解釋名詞（每題 5 分，共 30 分）

1. Learning Curve
2. Project Overhead
3. Quantity Takeoff
4. Cost Slope
5. Bid Bond
6. Alternative Dispute Resolution

注意：背面有試題

三、計算題（每題 10 分，共 20 分）

1. 假設費用為線性分配，即每日之花費為一作業項目之所有費用除以該作業項目之工期（每月以三十天計算），試繪下圖之S-Curve。（10分）

作業	費用(元)	1月	2月	3月	4月
A	300	■			
B	600		■		
C	900		■	■	
D	600			■	
E	300				■

2. 已知某工程之作業名稱，後續作業，及工期如下表所示。請列表顯示各作業項目之最早、最晚開始與完成時間（ES, EF, LS, LF）、總浮時（TF），並標明在要徑上之作業。（10分）

作業項目	工期(天)	後續作業
A	5	F,H
B	6	C,F
C	10	E,G
D	4	A,E
E	8	H,G
F	7	G
G	4	-
H	5	-