

國立交通大學 102 學年度碩士班考試入學試題

科目：營建管理(3071)

考試日期：102 年 2 月 4 日 第 1 節

系所班別：土木工程學系

組別：土木系乙組一般生

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【可使用計算機】\*作答前請先核對試題、答案卷(試卷)與准考證之所組別與考科是否相符!!

1. 請詳述列舉國內專案管理顧問 (PCM) 於規劃設計階段之五點缺失，並說明各缺失對於品質、成本或進度之影響。(25%)
2. 某一大專院校擬興建跨領域實驗大樓一棟，並決定採統包方式推動，假設你是本案的專案管理顧問，請具體說明你前六個月將如何協助業主如期如質如預算的推動本案。(25%)
3. In the following project, please determine: (1) the critical path, (2) the expected duration, (3) the variance of the expected duration, and (4) the standard normal variate with the expected duration, the variance of the expected duration, and a targeted duration of 80 weeks. (16%)

| No  | Name of the activity               | Symbol | Preceding Activity | Time Distribution (weeks) |    |    |
|-----|------------------------------------|--------|--------------------|---------------------------|----|----|
|     |                                    |        |                    | a                         | m  | b  |
| 1.  | Land Surveying                     | A      | -                  | 6                         | 8  | 11 |
| 2.  | Plan preparation                   | B      | A                  | 4                         | 7  | 10 |
| 3.  | Rock blasting                      | C      | B                  | 15                        | 20 | 24 |
| 4.  | Land leveling                      | D      | C                  | 5                         | 9  | 12 |
| 5.  | Drainage channel digging           | E      | D                  | 4                         | 6  | 10 |
| 6.  | Stone pitching of drainage channel | F      | E                  | 12                        | 16 | 22 |
| 7.  | Digging of wells                   | G      | B                  | 15                        | 20 | 30 |
| 8.  | Laying of irrigation lines         | H      | G                  | 10                        | 12 | 18 |
| 9.  | Construction of Pump house         | I      | G                  | 8                         | 14 | 21 |
| 10. | Procurement of pumps               | H      | G                  | 4                         | 6  | 8  |
| 11. | Installation of pumps              | K      | I, J               | 5                         | 7  | 12 |
| 12. | Finishing works                    | L      | F, H, K            | 4                         | 6  | 10 |

4. What is contingency reserve? What is management reserve? How to estimate these reserves? Who has the authority to use these reserves? Are these reserves included in the cost baseline of the project? (25%)
5. Please describe the risk management process of a major construction project. (9%)