

國立交通大學 97 學年度碩士班考試入學試題

科目：營建管理(3071)

考試日期：97 年 3 月 8 日 第 1 節

系所班別：土木工程學系

組別：土木系乙組

第 / 頁, 共 / 頁

【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. Earned Value Analysis: Suppose a construction work package is expected to cost \$250,000 to complete the work. It is originally scheduled to complete today. However, due to delays, it is estimated that the work is only 80% completed now and has actually expended \$200,000. Answer the following questions: (4% each, total 28%)
 - a. What is the earned value (EV) of the work?
 - b. What is the cost variance (CV)?
 - c. What is the schedule variance (SV)?
 - d. What is the cost performance index (CPI)?
 - e. What is the schedule performance index (SPI)?
 - f. What is the estimated cost to complete (ETC) of the work?
 - g. What is the estimated cost at completion (EAC)?
2. In earning value analysis, can you tell how to estimate the "percent completion" of each work package? Note that the percent completion of the work package in the foregoing question is 80%. (10%)
3. The American Association of Cost Engineers (AACE) has proposed three classifications of cost estimate techniques: (12%)
 - a. Order-of-magnitude estimates
 - b. Budget estimates
 - c. Definitive estimates

What kind of design and engineering information and data are required for each technique? And, what is the associated estimating accuracy?

4. 房屋建築工程於工程構想先期規劃(可行性評估)階段應探討哪些項目? 試詳細說明之。(25%)
5. 營建工程施工時可能造成的環境公害有哪些? 其預防及減輕對策為何? 試舉 5 例說明之。(25%)