

一. 解釋名詞：(20%)

- (1) 統包
- (2) 最有利標
- (3) PCM
- (4) BOT, BT, OT, ROT

二. 國內公共工程常見的履約爭議案件有哪些類別？試簡要說明其產生原因，並比較爭議處理、仲裁、訴訟三種解決工程爭議方式的優缺點。(20%)

三. 機關委託技術服務評選及計費辦法中的計費方式中，主要有服務成本加公費法及建造成本百分比法，請說明並比較此二種方法的優缺點。(20%)

四. Given project up-to-date status as follows:

Expenditure Item	Up-To-Date	Original Estimated Cost	Original Estimated Quantity	Up-To-Date Quantity actually Completed %	Actual Manhours Up-To-Date	Unit
1	9,800.00	12,888	460.25	86.91	24	CY
2	450.00	598	59,800.00	81.19	300	LF

Determine the followings (15%)

1. Calculate the cost Amount, Quantity, and Unit Cost for each item in terms of:
 - A. Up-to-Date
 - B. Forecast at Completion.
2. Determine productivity for each item (up-to-date).
3. What is your evaluation of the project cost status at completion? Would the project have any cost overrun and schedule delayed based on up-to-date project status
4. Show all your calculations

五. The project has the planned activity data and relationships among the activities as follows:

Activity	Duration(month)	Immediate Successors
A	4	B
B	4	C
C	1	O
D	4	E,H
E	3	F
F	4	G
G	3	O
H	3	G,N
L	2	M
M	3	G,N
N	8	O
O	0	--

You are asked to provide (25%)

1. A schedule flow chart using Precedence Diagram Method (PDM)
2. How many months will this project be completed?
3. Which activities are critical activities?
4. What are the early start (ES), late start (LS), Early Finish (EF), and late Finish (LF) for activities C, F, G, and M.
5. If the client insists to complete the project in a year, regardless what you plan previously, what will be the ES, LF, and Floats of the activities C, G, H, and M.
6. If it costs \$1,000 every day for every activity,
 - A. What will be the total cost for this project when it finishes as planned?
 - B. At the end of the 6th month, how much will the project cost be, if the project manager decides to start each activity as late as possible