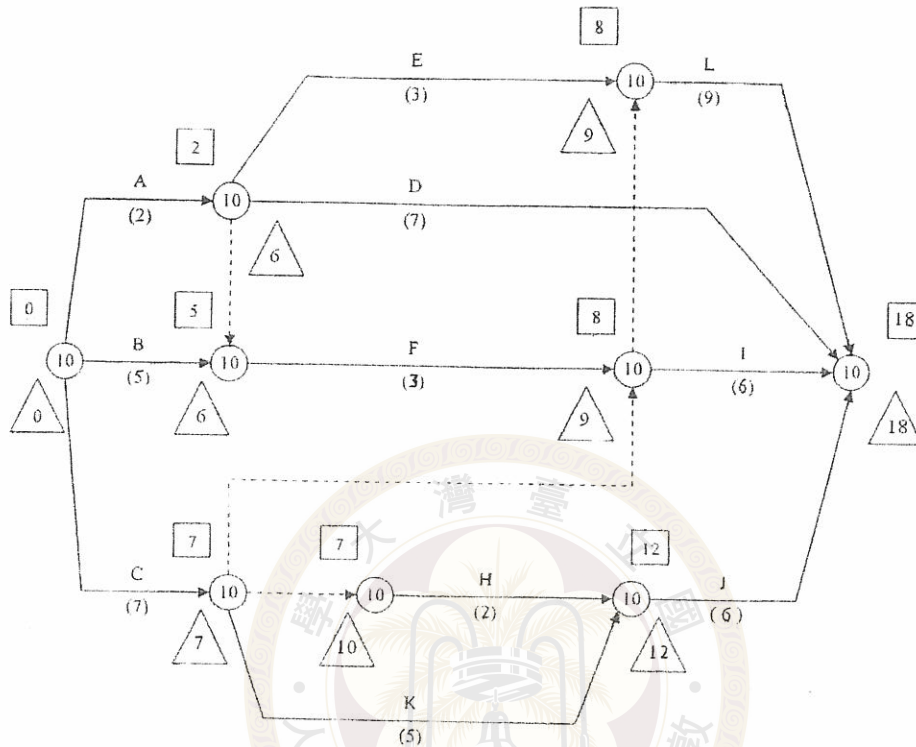


※ 本大題請於試卷內之「選擇題作答區」依序作答。

I. (28%) Given the following activities (unit of time is day) and answer the following questions. Assume that the working hours of every day are from 8 am to 5 pm.



1. The total number of days required to complete the network (project) is:

- a. 16 b. 17 c. 18 d. 19 e. 20

2. The Critical Path includes Activities:

- a. B,F,L b. B,F,I c. C,K,J d. A,E,L

3. The earliest time that Activity L can start is in the morning of day:

- a. 8 b. 9 c. 10 d. 11 e. 12

4. The early finish time for Activity H is in the evening of day:

- a. 7 b. 8 c. 9 d. 10 e. 11

5. The latest time Activity F must be finished is in the evening of day:
(otherwise the project will be delayed)

- a. 7 b. 8 c. 9 d. 10 e. 11

6. The latest time Activity H must start is in the morning of day:

- a. 11 b. 12 c. 13 d. 14 e. 15

見背面

※ 注意：以下各題請於試卷內之「非選擇題作答區」作答，並應註明作答之題號。

II. According to the latest standards & guideline publication of Project Management Institute (PMI), what are the 9 knowledge areas (functions) of project management?(9%)

III. What are the principles of managing project risk?(9%)

IV. What is Construction Management? How do you define it?(10%)

V. What are the differences among the following type of contracts(15%)?

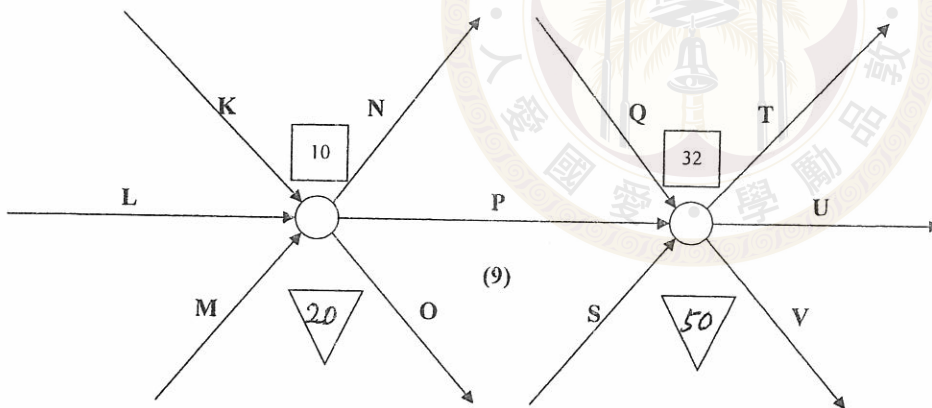
1. Lump-Sum
2. Unit Price
3. Cost Plus
4. Design Build
5. BOT

VI. The following part of the network has given data:

At the left node, early even time is 10 and late event time is 20

At the right node, early event time is 32 and late event time is 50

Activity P has duration 9.



To Determine the Activity P's (14%)

Early Start =

Late Start =

Early Finish =

Late Finish =

Total Float =

Free Float =

Independent Float =

VII. Assume that you have a concrete casting job;
Given the present project status as follows: (15%)

Cost	Originally Estimated	Originally Estimated	Quantity Completed	Labor hours
<u>Up-To-Date</u>	<u>Cost</u>	<u>Quantity</u>	<u>Up-To Date</u>	<u>Up-To-Date</u>
800,000	900,000	1,000	800	200

The unit is cubic meter. To determine:

1. Determine Productivity (**Unit Rate**) and Unit Cost **Up-To-Date**.
2. Determine Total Cost at completion
3. Determine Cost to-be-complete
4. Determine Cost Variation at completion
 - A. **Absolute** Amount (Overrun or Underrun)
 - b. **Relative Percentages (%)**