

國立高雄應用科技大學
106 學年度研究所碩士班招生考試
工業工程與管理系碩士班
生產管理

試題 共 3 頁，第 1 頁

注意：a.本試題共 5 大題，共 100 分。

b.作答時不必抄題，但請依題號順序作答。

c.考生作答前請詳閱答案卷之考生注意事項。

(題目自此開始)

1. Briefly clarify the following key words. (40%)

- (1) Design for recycling
- (2) Predetermined time standard
- (3) Modular design
- (4) Mean absolute deviation(MAD)
- (5) O2O

2. (15%)

Given the operation times provided：

- a. Develop a job sequence that minimizes idle time at the two work centers. (8%)
- b. Construct a chart of the activities at the two centers, and determine each one's idle time, assuming no other activities are involved.

	Job Times(minutes)					
	A	B	C	D	E	F
Center 1	20	16	43	60	35	42
Center 2	27	30	51	12	28	24

3.(15%)

For the set of tasks given below, do the following :

- Develop the precedence diagram. (8%)
- Determine the minimum cycle time and then calculate the cycle time for a desired output of 500 units in a seven-hour day.
- Determine the minimum number of workstations for output of 500 units per day.

Task	Task time	Immediate Predecessor
A	45	--
B	11	A
C	9	B
D	50	--
E	26	D
F	11	E
G	12	C
H	10	C
I	9	F, G, H
J	10	I

4.(15%)

A small grocery store sells fresh produce, which it obtains from a local farmer. During the strawberry season, demand for fresh strawberries can be reasonably approximated using a normal distribution with a mean 40 quarts per day and a standard deviation of 6 quarts per day. Excess costs run 35 cents per quarts. The grocer orders 49 quarts per day.

- What is the implied cost of shortage per quart? (8%)
- Why might this be a reasonable figure?

5.(15%)

The data in the table below represent time study observations for a woodworking operation.

- a. Based on the observations, determine the standard time for the operation, assuming an allowance of 15% of job time. (8%)
- b. How many observations would be needed to estimate the mean time for element 2 within 1% of its true value with a 95.5% confidence ($z=2$)?

Element	Performance Rating	Observations (minutes per cycle)					
		1	2	3	4	5	6
1	110%	1.20	1.17	1.16	1.22	1.24	1.15
2	115%	0.83	0.87	0.78	0.82	0.85	1.32*
3	105%	0.58	0.53	0.52	0.59	0.60	0.54

*Unusual delay, disregard time.

[試題結束]