

國立臺北科技大學 100 學年度碩士班招生考試

系所組別：4110 工業工程與管理系碩士班甲組

第二節 生產管理 試題

第一頁 共二頁

注意事項：

1. 本試 15 題選擇題(每題 4 分)，2 題計算題(每題 20 分)，配分共 100 分。
2. 請標明大題、子題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

一、選擇題(每題 4 分，共 60 分)

※注意：請務必將題號及選答如下表抄至答案卷。

題號	1	2	3	4	5
選答					
題號	6	7	8	9	10
選答					
題號	11	12	13	14	15
選答					

1. Which of the following would probably not involve the use of PERT?
 - A. planning and constructing a new city hall
 - B. developing an advertising campaign for a new product
 - C. designing and constructing a subway system
 - D. writing a poem
 - E. preparing for the visit of a foreign dignitary
2. Which of the following is the last step in the capacity/scheduling chain?
 - A. product planning
 - B. process planning
 - C. capacity planning
 - D. aggregate planning
 - E. scheduling
3. Which of the following would you not expect to see in a lean environment?
 - A. a significant number of daily schedule changes
 - B. a flexible system

- C. minimum inventory
 - D. little waste
 - E. reduced setup times
4. In MRP, under lot-for-lot, order sizes for component parts are essentially determined directly from which one of the following?
 - A. gross requirements
 - B. net requirements
 - C. economic order quantity
 - D. gross requirements - net requirements
 - E. net requirements - amount on-hand
 5. Which of the following would not be a strategy associated with adjusting aggregate capacity to meet expected demand?
 - A. subcontract
 - B. vary the size of the workforce
 - C. use backorders
 - D. vary the intensity of workforce utilization
 - E. allow inventory levels to vary
 6. Which of the following is not a benefit of effective supply chain management?
 - A. lower inventory costs
 - B. higher productivity
 - C. shorter lead times
 - D. greater customer loyalty
 - E. larger number of suppliers
 7. Which of the following is not one of the assumptions of the basic EOQ model?
 - A. Annual demand requirements are known and constant.
 - B. Lead time does not vary.
 - C. Each order is received in a single delivery.
 - D. Quantity discounts are available.
 - E. All of the above are necessary assumptions.
 8. The method for evaluating location alternatives which minimizes shipping costs between multiple sending and receiving locations is:
 - A. cost-volume analysis
 - B. transportation model analysis
 - C. factor rating analysis

注意：背面尚有試題

- D. linear regression analysis
E. MODI analysis
9. Cellular layout is a term associated with:
A. wireless telecommunication
B. functional (or process) layouts
C. part families
D. assembly lines
E. job shops
10. A group of machines including supervisory computer control, automatic material handling, and possibly robots is called:
A. a flexible manufacturing system
B. computer aided design
C. a manufacturing cell
D. computer-aided manufacturing
E. computer-integrated manufacturing
11. The primary difference between seasonality and cycles is:
A. the duration of the repeating patterns
B. the magnitude of the variation
C. the ability to attribute the pattern to a cause
D. the direction of the movement
E. there are only 4 seasons but 30 cycles
12. Which of the following is not a strategy to manage service capacity?
A. hiring extra workers
B. backordering
C. pricing and promotion
D. part time workers
E. subcontracting
13. One possible disadvantage of modular design is that:
A. replacement and repair is more difficult
B. failure diagnosis is more complex
C. number of configurations of modules decreases
D. individual parts lose their identities
E. inventory problems arise

14. Production systems with customized outputs typically have relatively:
A. high volumes of output
B. low unit costs
C. high amount of specialized equipment
D. skilled workers
E. fast work movement
15. Which of the following is not a key factor of competitiveness?
A. price
B. product differentiation
C. flexibility
D. after-sale service
E. size of organization

二、計算題(每題 20 分，共 40 分，須寫明計算過程，否則不予計分)

1. 國立臺北科技大學管理學院每天平均使用 10 包 A4 影印紙，使用量呈現每日標準差為 2 包的常態分配。每包紙的訂購成本是 100 元，每包紙的年持有成本是 40 元，訂購之前置時間是 3 天。假設一年工作日為 360 天。
a)(5%) 計算 EOQ。
b)(5%) 計算於提供 96%前置時間服務水準($z = +1.75$)下的 ROP。
c)(5%) 在 96%前置時間服務水準($z = +1.75$)下，計算每週期的預期缺貨單位數及每年的預期缺貨單位數。(標準化的缺貨單位數 $E(z) = 0.016$)
d)(5%) 計算年服務水準。
2. 國立臺北科技大學附設之鑄造廠每天工作 400 分鐘，若你為工廠管理者，希望每天產出 200 單位，各項作業如下表所示，回答下列問題：

作業	後續作業	作業時間
a	b, c, d	0.5
b	e	1.4
c	e	1.2
d	f	0.7
e	g, j	0.5
f	i	1.0
g	h	0.4
h	k	0.3
i	j	0.5
j	k	0.8
k	m	0.9
m	結束	0.3

- a)(5%) 描繪先行關係圖。
b)(5%) 依據最多後續作業數指派各項作業達成生產線平衡的目標。
c)(5%) 依據最大位置權重法指派各項作業達成生產線平衡的目標。
d)(5%) 計算 b)和 c)兩法則的閒置時間比例，並說明你有何結論。