

國立臺北科技大學

九十四學年度工業工程與管理系碩士班入學考試

生產管理試題

填准考證號碼

第一頁 共三頁

--	--	--	--	--	--	--	--

注意事項：

1. 本試題共五題，配分共 100 分。
2. 請按順序標明題號作答，不必抄題。
3. 全部答案均須答在答案卷之答案欄內，否則不予計分。

一、選擇題甲(每題 2%， 共 30%)

(注意： 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 items listed below would not generally be considered a reason for holding inventories?
 (A) smoothing requirements on operations (B) decoupling internal operations
 (C) meeting anticipated demand (D) minimizing carrying costs
 (E) reducing the risk of a stockout
2. Which is not considered a holding cost?
 (A) interest (B) insurance
 (C) depreciation (D) opportunity cost of funds
 (E) stockout cost
3. Which of the following is a disadvantage of standardization in product and service design?
 (A) increased number of inventory items (B) increased training costs
 (C) decreased expenditures on perfecting designs
 (D) decreased product variety (E) all of the above

4. Which of the following is not an action likely to be taken in the last phase of a product life cycle to prolong the life of a product?
- (A) improve the reliability of the product
 - (B) reduce the cost to produce (and therefore the price)
 - (C) redesign the item
 - (D) change the packaging
 - (E) reduce promotions
5. Utilization is defined as the ratio of:
- (A) actual output to effective capacity
 - (B) actual output to design capacity
 - (C) design capacity to effective capacity
 - (D) effective capacity to actual output
 - (E) design capacity to actual output
6. Which of the following best describes aggregate planning?
- (A) the link between intermediate term planning and short term operating decisions
 - (B) a grouping of planning techniques
 - (C) make or buy decisions
 - (D) an attempt to balance capacity and demand
 - (E) manpower planning
7. The direct result of disaggregating the aggregate plan is the:
- (A) marketing plan
 - (B) production plan
 - (C) master schedule
 - (D) rough-cut capacity plan
 - (E) material requirements plan
8. The linking of a broad range of manufacturing activities through a computer system is referred to as:
- (A) computer-integrated manufacturing
 - (B) computer-aided design
 - (C) computer-aided manufacturing
 - (D) automation
 - (E) a flexible manufacturing system
9. For a certain item, the cost-minimizing order quantity obtained with the basic EOQ model was 200 units and the inventory carrying cost per unit per year for this item is \$3.00. The total annual ordering cost was
- (A) \$200
 - (B) \$300
 - (C) \$600
 - (D) \$500
 - (E) not enough data to determine
10. Which of the following is not a characteristic of layout decisions in system design?
- (A) substantial investment of both money and effort
 - (B) long-term commitment
 - (C) significant impact on short-term efficiency
 - (D) usually well-received by operative personnel
 - (E) layout decisions are related to process strategy
11. Which term is most closely associated with cellular manufacturing?
- (A) part families
 - (B) assembly line
 - (C) robotics
 - (D) CAD
 - (E) CAM

注意：背面尚有試題

12. A production line is to be designed for a job with three tasks. The task times are 0.3 minutes, 1.4 minutes, and 0.7 minutes. The minimum cycle time in minutes, is:
 (A) 0.3 (B) 0.7 (C) 1.4 (D) 2.4 (E) none of these
13. Lost production time, scrap, and rework are examples of:
 (A) internal failure costs (B) external failure costs
 (C) appraisal costs (D) prevention costs
 (E) replacement costs
14. The philosophy of zero defects is
 (A) the result of Deming's research
 (B) unrealistic
 (C) prohibitively costly
 (D) an ultimate goal; in practice, 1 to 2% defects is acceptable
 (E) consistent with the commitment to continuous improvement
15. Demand for dishwasher water pumps is 8 per day. The average ordering lead time is 9 days and the standard deviation of lead time is 2 days. What should the standard deviation of the lead time demand be?
 (A) about 12 (B) about 16 (C) about 24 (D) about 48 (E) about 72

二、選擇題乙(每題 5% , 共 20%)

(注意：將題號及選答如下表抄至答案卷)

題號	1	2	3	4
選答				

)

1. A product has the following gross requirements. Lot-for-lot, part period balance, or EOQ lot sizing is to be considered.

Week	1	2	3	4	5	6
Requirements	50	80	90	50	30	60

Other data for this scenario include: setup cost = \$250, inventory holding cost \$2 per week. There is no beginning inventory, there are no scheduled receipts. Only inventory holding cost and set up cost are considered. About the total cost of different lot sizing method, which of the following is true?

- (A) Total cost for PPB over the six periods is less than that for EOQ.
 (B) Total cost for PPB over the six periods is greater than that for "lot for lot".
 (C) Total cost for EOQ over the six periods is greater than that for lot for lot.
 (D) Total cost for EOQ over the six periods is 1550
 (E) Total cost for "lot for lot" over the six periods is 1250
 (F) Total cost for PPB over the six periods is 2210

2. Given the following data, construct a material requirements plan which will result in 100 units of Parent #1 (P1) at the beginning of week 6, and 200 units of Parent #2 (P2) at the beginning of week 8. Relating to the MRP calculation, which of the following is true?

Item	Parent	Quantity (usage per)	On-Hand	On Order (due)	Lead Time	Order Size
P1	-	-	-	-	1	lot-for-lot
P2	-	-	-	-	1	lot-for-lot
A	P1, P2	1,2	70	0	1	500
B	P1, P2	2,1	50	0	3	250
C	A, B	3,4	1000	2000 (wk 2)	2	2000

- (A) A planned order release of part B at the beginning of week 5 is 250
 (B) A planned order release of part A at the beginning of week 5 is 500
 (C) A planned order release of part C at the beginning of week 2 is 2000
 (D) Gross requirement of part A at the beginning of week 8 is 400
 (E) Net requirement of part C at the beginning of week 4 is 2500
 (F) Gross requirement of part B at the beginning of week 7 is 400

3. 某一生產線製造多種主機板，每月工作20天，其中一種主機板之月需求為36000片，該生產線之生產速率為每天3600片，生產線之整備(setup)成本為每小時1000元，主機板之製造成本為每片1000元，存貨年儲存成本為製造成本的20%，假設管理階層希望以每日平均需求為生產批量大小，則最佳之設備整備時間為多少分？

- (A) 2940 (B) 270 (C) 45 (D) 30 (E) 22.5 (F) 15

4. 工令 U、V、W、X 與 Y 需經工作站 M1 再經工作站 M2 處理，已知在工作站 M1 之排序為 U、V、W、X 與 Y，工作站 M2 擬依 CR 法則決定工令的排序，其排序應如何？下表為工令所需處理時間及到期日資料。

工令代號	M1 處理時間	M2 處理時間	工令到期日
U	4	16	29
V	8	12	38
W	6	10	30
X	3	10	20
Y	15	15	35

- (A) XYUWV (B) XYUVW (C) UWVXY
 (D) UWYVX (E) UXYWV (F) UWXYV

三、填空题(每题 3%，共 30%)

(注意：將題號及填答如下表抄至答案卷，且不可縮寫)

題號	填答
1	
2	
3	
:	
:	

1. _____ is the total of all outputs produced by the transformation process divided by the total of the inputs.
2. The _____ is how an organization expects to achieve its missions and goals.
3. _____ is the amount of times an individual activity in a network can be delayed without delaying the entire project.
4. The _____ is a body of knowledge that deals with anything that limits an organization's ability to achieve its goals.
5. The _____ is the time between the arrival of raw materials and the shipping of finished products.
6. _____ is a process for determining customer requirements and translating them into attributes that each functional area can understand and act upon.
7. _____ is a rapid, efficient production process that responds to constantly changing unique customer desires.
8. _____ is extra stock that is carried to serve as a buffer.
9. A(n) _____ is a listing of the components, their description, and the quantity of each required to make one unit of a product.
10. A(n) _____ system is a packaged business software that automates and integrates the majority of their business processes, shares common data and practices across the entire enterprise, and produces and accesses information in a real-time environment.

四、那些 JIT 技術在製造業與服務產業中皆可以運用？這些 JIT 技術可協助那些競爭優勢之建立？(10%)

五、物料需求規劃(material requirements planning, MRP)的定義為何？試繪一流程圖呈現 MRP 與整體規劃(aggregate planning)、產能需求規劃(capacity requirements planning)及短期排程(short term scheduling)間的關係，並說明之。(10%)