國立臺北科技大學九十五學年度碩士班招生考試

系所組別：4111 工業工程與管理系碩士班甲組

第二節 生產管理（選考）試題

填准考證號碼

注意事項：
1. 本試題共 19 題，單一選擇題 15 題(60 分)，計算題 4 題(40 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。
4. 計算題未列計算或分析步驟則不予計分，計算題過程算至小數點第二位(第三位四捨五入)，計算題答案算至小數點整位數(第一位四捨五入)。

第一部份 (第 1 至 15 題，每題 4 分，共 60 分)

1. The most appropriate layout for job-shop manufacturing process should be:
   (A) U-shape   (B) Process   (C) Cellular   (D) Fixed-position

2. In sequencing jobs through one work center scheduling, which priority rule can result in lower Work-In-Process (WIP) inventories?
   (A) FCFS   (B) SPT   (C) EDD   (D) CR

3. Which one of following therbligs is a non-productive one?
   (A) Grasp   (B) Assemble   (C) Preposition   (D) Select

4. Which one of follows is **NOT** an advantage for Just-In-Time (JIT) production system?
   (A) Increasing capacity utilization   (B) Decreasing defective rate
   (C) Increasing turnover rate   (D) Making TQM easier

5. Generally speaking, which one of following descriptions for "ATP" is correct?
   (A) ATP is the abbreviation of "Acceptance To Promise"
   (B) ATP is determined only by Master production schedule (MPS)
   (C) If the ordering quantity from a customer is less than ATP, the vendor is able to promise this order at once without check capacity and inventory.

(D) ATP is not needed updating to avoid data missing.

6. Which one of following descriptions for "Mass Customization" is correct?
   (A) Delay differentiation is a very helpful technique for Mass Customization.
   (B) Providing lower variety and low-cost products
   (C) Modular design is not helpful in Mass Customization.
   (D) Requiring no multiple-skilled personnel

7. Theoretically, there are four QFDs (Quality Function Deployment). Which one of following information is **NOT** given in the first QFD ?
   (A) Voice of Customer (VOC)
   (B) The correlation between VOC and design requirements
   (C) Solutions for the conflicts between design requirements
   (D) Competitive analysis

8. Which one of following tables or graphics can **ONLY** tell the sequences, standard times, content, tooling, and equipments of manufacturing operations ?
   (A) Operation process chart
   (B) Flow process chart
   (C) Route sheet
   (D) Multi-product process chart

9. In the point of view of Product R&D, which one of following descriptions is true?
   (A) Manufacturability is equivalent to Process Capability.
   (B) To speed up time-to-market, it is not necessary to consider the abilities of disposal and of recycle for a newly designed product.
   (C) Highly frequent engineering change (EC) occurrences should be concentrated at mass production phase to save R&D cost.
   (D) A product composed by large amount of standard components may decrease customers' appeal.

10. Smoother OC curve means that the sampling plan:
    (A) has larger sample size
    (B) is more beneficial to producer
    (C) has smaller acceptance number
    (D) is closer to ideal sampling plan

11. Which one of following costs is **NOT** related to EOQ or EPQ models?
    (A) Set-up cost

注意：背面尚有試題

(B) Unit manufacturing cost

(C) Shortage cost

(D) Depreciation cost of material handling equipments

12. Break-Even Analysis may **NOT** be appropriate to make decision for:
    (A) Facility location planning
    (B) Make or buy
    (C) Automatic or manual processing
    (D) Inventory policy

13. Which one of following outputs is **NOT** from Material Requirement Planning (MRP) system?
    (A) Performance control report
    (B) Exception report
    (C) The release time and quantity of planning orders
    (D) Capacity load report

14. Which one of following descriptions is **NOT** correct?
    (A) The basic concept of "two-bin" system is from periodic inventory counting system.
    (B) The ordering quantity of item A material in ABC classification should be less.
    (C) In MRP system, items A, B, and C material in ABC classification share same importance.
    (D) Safe stock in EOQ model is able to ease the variation of demand during ordering lead-time.

15. Concerning with Project Management, a technique for shortening activity duration is called :
    (A) Work Breakdown Structure　　(B) Crashing　　　(C) PERT　　　(D) Slack time

第二部份(第 16 至 19 題，每題 10 分，共 40 分)

16. 某公司之甲產品明年銷售量預測方程式為 $Y(t) = 350 + 24t + 10t^2$，若甲產品是由三個 A 組件與兩個 B 組件裝配而成，按以往之經驗; 預測誤差應往下修正 3% 才合理，甲產品之期末存貨計畫與 A 組件之期末存貨計畫列於表一與表二。假設生產部門全力配合生產，備用物料另需 10%，若僅考慮甲產品之物料需求，試問明年(t = 4) A 組件之採購量應為多少？

表一

甲產品之期末存貨計畫		
期數(t)	3	4
期末計劃存貨量	800	1000

表二

A組件之期末存貨計畫		
期數(t)	3	4
期末計劃存貨量	600	1100

17. 截至今晚 12 點為止，某 119 勤務中心過去 10 天(含今天)之實際報案電話數如表三所示，但強颱明晨登陸，一執勤人員欲利用簡單指數平滑法預測明天報案電話數，

(a) 此執勤人員應該用 0.15 或 0.4 當作平滑常數較為合理?簡述你的看法(3%)

(b) 利用簡單指數平滑法，若 $F_{10}=140$，利用(a)之結論求 F_{11}(3%)

(c) 利用表三與表四，求第 10 期之追蹤訊號(Tracking signal)為何?正常嗎? (4%)

表三

天	實際報案電話數	天	實際報案電話數
1	206	6	178
2	168	7	159
3	210	8	145
4	180	9	123
5	150	10	136

表四

天	預測報案電話數	天	預測報案電話數
1	198	6	150
2	180	7	182
3	200	8	150
4	190	9	198
5	143	10	140

18. 甲公司欲投資製造 A、B 與 C 三種產品，A、B 與 C 三種產品之固定成本及售價，單位製造成本，預測銷售量如表五，欲獲利 100000 元，求 A、B 與 C 三種產品之總銷售金額為何?

表五

產品	固定成本	銷售單價	單位製造成本	預測銷售量
A	300000	100	80	3000
B	160000	120	90	5000
C	420000	160	130	6000

19. 此題為零工式參機排程之題目，表六為工單 A、B、C、D 與 E 分別在工站一、二與三之加工處理時間
(a) 如何判斷第二站為非瓶頸工站(5%)
(b) 如何判斷並寫出工單 A、B、C、D 與 E 之生產順序(5%)

表六

工單	工站一	工站二	工站三
A	8	3	7
B	10	5	8
C	7	2	4
D	9	4	5
E	6	5	8