國立中央大學八十八學年度碩士班研究生入學試題卷

所別：工業管理研究所　乙組　科目：生產與作業管理　共 3 頁　第 1 頁

本試題卷共有五十題選擇題（皆為單選題），每題兩分，總分為一百分。請依題號順序作答，答案也請以大寫英文字母（A，B，C，D，E）作答，並清楚地標明題號於答案紙上，凡題號不清或無題號之答案，將以零分計算。

1. The field of operations management is shaped by advances in which of the following fields?
   A. industrial engineering and management science
   B. biology and anatomy
   C. information sciences
   D. chemistry and physics
   E. all of the above
2. An assembly drawing
   A. shows, in schematic from, how the product is assembled.
   B. shows an exploded view of the product
   C. lists the operations, including assembly and inspection, necessary to produce the components with the material specified in the bill-of-material.
   D. provides detailed instructions on how to perform a given task.
   E. describes the dimensions and finish of each components
3. A production line is to be designed for a product whose completion requires 21 minutes of work. The factory works 400 minutes per day. Can an assembly line with five workstations make 100 per units per day?
   A. yes, with exactly 100 minutes to spare
   B. no, it will fall short even with a perfectly balanced line
   C. no, but four workstations would be sufficient
   D. yes, but the line's efficiency is very low
   E. cannot be determined from the information given
4. Which of the following smoothing constants would make an exponential smoothing forecast equivalent to a naive forecast?
   A. 0
   B. 1 divided by the number of periods
   C. 5
   D. 1.0
   E. cannot be determined
5. The MPS calls for 50 units of Product A and 60 of B. There are currently 25 of Product B on hand. Each A requires 2 of Part C; each B requires 5 of C. There are 160 units of C available. The net requirements for C are
   A. 115
   B. 225
   C. 240
   D. 690
   E. 700
6. A retail/service layout
   A. groups workers, their equipment, and spaces/offices to provide for movement of information
   B. addresses the layout requirements of large, bulky projects such as ships and buildings
   C. seeks the best personnel and machine utilization in repetitive or continuous production
   D. allocates shelf space and responds to customer behavior
   E. deals with low-volume, high-variety production
7. Which one of the following is not a benefit of the implementation of JIT
   A. cost reduction
   B. work in process reduction
   C. quality improvement
   D. delay reduction
   E. variability increase
8. An advantage of the fixed-period inventory system is that
   A. there is no physical count of inventory items when an item is withdrawn
   B. no inventory records are required
   C. orders usually are for smaller order quantities
   D. the average inventory level is reduced
   E. the supplier will be more cooperative
9. An acceptance sampling plan's ability to discriminate between low quality lots and high quality lots is described by
   A. a Gantt chart
   B. an Operating Characteristics curve
   C. the Central Limit Theorem
   D. a process control chart
   E. a range chart
10. One of the major advantages of process-oriented layouts is
    A. high equipment utilization
    B. large work-in-process inventories
    C. smooth and continuous flow of work
    D. flexibility in equipment and labor assignment
    E. none of the above
11. Acceptance sampling is usually used to control
    A. incoming lots of purchased products
    B. the number of units output from one stage of a process which are then sent to the next stage
    C. the number of units delivered to the customer
    D. the quality of work-in-process inventory
    E. none of the above
12. Pareto charts are used to
    A. identify inspection points in a process
    B. organize errors, problems or defects
    C. outline production schedules
    D. show an assembly sequence
    E. none of the above
13. Which of the following statements regarding Material Requirements Planning is true
    A. the MRP process requires three inputs: the bills of materials, the inventory records, and the aggregate production schedule
    B. a bill of materials lists all components, ingredients, and materials needed to produce one unit of an item
    C. low-level coding is appropriate when the same part is used at more than one place in the product structure diagram (of one or more products)
    D. gross requirements at one level generate the gross requirements at the next lower level
    E. in MRP, a "bucket" refers to a fixed order quantity, such as an EOQ
14. Which of the following statements is true
    A. the person most responsible for initiating use of interchangeable parts in manufacturing was Eli Whitney
    B. the origins of management by exception are generally credited to Frederick W. Taylor
    C. the person most responsible for initiating use of interchangeable parts in manufacturing was David Whitwam
    D. the origins of the scientific management movement are generally credited to James Taylor
    E. the person most responsible for initiating use of interchangeable parts in manufacturing was Henry Ford
15. Which one of the following is a characteristic of a JIT partnership?
    A. large number of suppliers
    B. steady output rate
    C. maximal product specifications imposed on supplier
    D. active pursuit of vertical integration
    E. frequent deliveries in large lot quantities
16. The implementation of JIT offers several advantages, including
    A. reduced throughput
    B. decreased profit margins
    C. increase in variability to better respond to variable demand
    D. rework reduction
    E. work-in-process increases
17. A job shop is an example of a(n)
    A. repetitive process

B. intermittent process
C. continuous process
D. line process
E. specialized process

18. Which of the following is the term used for medium range capacity planning with a time horizon of three to eighteen months?
A. material requirements planning
B. short range planning
C. aggregate planning
D. strategic planning
E. none of the above

19. The percent of variation in the dependent variable that is explained by the regression equation is measured by the
A. mean absolute deviation
B. coefficient of determination
C. slope
D. correlation coefficient
E. intercept

20. Which of the following is not a step in the forecasting process
A. determine the purpose
B. eliminate any assumptions
C. establish a time horizon
D. select a forecasting model
E. implement the result

21. A production line is to be designed to make 500 El-More dolls per day. Each doll requires 11 activities totaling 16 minutes of work. The factory operates 1000 minutes per day. The desired cycle time for this assembly line is
A. one-half minute
B. two minutes
C. 8,000 minutes
D. 5,500 minutes
E. cannot be determined

22. The extension of MRP which extends to resources such as labor hours and machine hours, as well as to order entry, purchasing, and direct interface with customers and suppliers is
A. MRP II
B. the master production schedule
C. closed-loop MRP
D. Enterprise Resource Planning
E. not yet technically possible

23. Reduction of in-transit inventory can be encouraged through use of
A. low setup costs
B. low carrying costs
C. use of trains, not trucks
D. supplier location near plants
E. low-cost, global suppliers

24. Effective capacity is
A. the maximum output of a system in a given period
B. the percent of design capacity actually expected
C. the average output that can be achieved under ideal conditions
D. a measure of the minimum usable capacity of a particular facility
E. none of the above

25. Forecasts
A. become more accurate with longer time horizons
B. are more accurate for individual items than for groups of items
C. are rarely perfect
D. all of the above
E. none of the above

26. A bill of materials lists
A. the production schedules for all products
B. the components, ingredients, and materials required to produce an item
C. the operations required to produce an item
D. the components, ingredients, materials and assembly operations required to produce an item
E. the times needed to perform all phases of product

27. A quality circle holds a brainstorming session and attempts to identify the factors responsible for flaws in a product. Which tool do you suggest they use to organize their findings?
A. Ishikawa diagram
B. Pareto chart
C. process chart
D. control charts
E. activity chart

28. The Academic Computing Center has five trainers available in its computer labs to provide training sessions to students. Assume that the capacity of the system is 1800 students and the utilization is 90 percent. If the number of students who actually got their orientation session is 1500, what is the efficiency of the system?
A. 92.6%
B. 1620 students
C. 1350 students
D. 90%
E. 75%

29. Characteristics of JIT partnerships with respect to quantities include
A. short-term contracts to ensure flexibility
B. variable output rate
C. suppliers package in variable quantities to meet exactly the customers' production requirements
D. suppliers determine the quantities to be delivered based on their own production schedules
E. suppliers increase production lot sizes in order to achieve economies of scale

30. The normal application of a p-chart is in
A. process sampling by variables
B. acceptance sampling by variables
C. process sampling by attributes
D. acceptance sampling by attributes
E. none of the

31. Which of the following is true regarding opportunities to improve service processes?
A. layout is of little consequence, since services seldom use an assembly line
B. if a work force is strongly committed, it need not be cross-trained and flexible
C. automation can do little to improve service processes, because services are so personal
D. all of the above are true
E. none of the above are true

32. Assignable causes
A. are causes of variation that can be identifted and removed
B. are not as important as natural causes
C. are within the limits of a control chart
D. depend on the inspector assigned to the job
E. are also referred to as "chance" causes

33. What is the approximate forecast for May using a four-month moving average?

Nov.	Dec.	Jan.	Feb.	Mar.	April
39	36	40	38	48	46

A. 38
B. 41
C. 42
D. 43
E. 46

34. The two most basic inventory questions answered by the typical inventory model are
A. timing and cost of orders
B. quantity and cost of orders
C. timing and quantity of orders
D. order quantity and service level
E. ordering cost and carrying cost

35. Which of the following aggregate planning methods minimizes the total costs of demand option variables using nonlinear cost curves?
A. linear programming
B. management coefficients model
C. simulation
D. linear decision rule
E. charting method

36. Which of the following statements about the basic EOQ model is true
A. If the ordering cost were to double, the EOQ would rise
B. If annual demand were to double, the EOQ would increase
C. If the carrying cost were to increase, the EOQ would fall
D. If annual demand were to double, both the EOQ and the number of orders per year would increase
E. All of the above statements are true

37. The fixed-position layout would be most appropriate in which of the following cases
A. constructing a Boeing 777
B. a fast food restaurant
C. a doctor's office
D. a gourmet restaurant
E. none of the above

38. Aggregate planning for service firms with high-volume tangible output is directed toward
A. yield management
B. centralized purchasing
C. decreasing the demand rate during peak periods
D. planning for human resource requirements and managing demand
E. smoothing the production rate

39. Productivity measurement is complicated by
A. the competition's output
B. the fact that precise units of measure are often unavailable
C. stable quality
D. the workforce size
E. the type of equipment used

40. The usual purpose of an R-chart is to signal whether
A. a gain or loss in uniformity has occurred
B. there has been a change in the percent defective in a sample
C. there has been a change in the central tendency of the process output
D. there has been a change in the number of defects in a sample
E. there has been a change in the AOQ

41. According to the manufacturing-based definition of quality,
A. quality is the degree of excellence at an acceptable price and the control of variability at an acceptable cost
B. quality depends on how well the product fits patterns of consumer preferences
C. quality is the degree to which a specific product conforms to standards
D. even though quality cannot be defined, you know what it is
E. quality lies in the eyes of the beholder

42. A big advantage of a process-oriented layout is
A. its low cost
B. its flexibility for variety
C. the simplified scheduling problem presented by this layout strategy
D. the ability to employ low-skilled labor
E. its high equipment utilization

43. The relationship between the average outgoing quality (AOQ) and the true percent defective is such that
A. AOQ > true percent defective.
B. AOQ = true percent defective.
C. AOQ < true percent defective.
D. there is no relationship between AOQ and true percent defective.
E. the relationship between these two parameters depends on the type of product.

44. A product whose EOQ is 40 experiences a decrease in ordering cost from $90 per order to $10. The revised EOQ is
A. three times as large
B. one-third as large
C. nine times as large
D. one-ninth as large
E. cannot be determined

45. Which of the following is true regarding the impact of information sciences on service operations
A. automatic identification systems, such as bar codes, allow operations data to be captured without workers keying in data
B. management information systems provide much of the control information for a firm
C. the Internet has become a source of technical information for customers as well as companies
D. expert systems mimic human logic to solve problems much as human experts would
E. all of the above

46. The major problem addressed by the fixed-position layout strategy is
A. the movement of material to the limited storage areas around the site
B. minimizing difficulties caused by material flow varying with each product
C. locating workers requiring frequent contact close to one another
D. the provision of low-cost storage with low-cost material handling
E. balancing product flow from one work station to the next

47. Which of the following statements regarding Material Requirements Planning is true
A. although the concepts behind MRP are complicated, its execution can be simple
B. while MRP is the most detailed and short range of the various levels of planning, it provides feedback to the production plan, which is medium range
C. independent demand items have their demand derived from the demand for some other item
D. independent demand items tend to have less smooth demand patterns than dependent demand items
E. MRP is generally practiced on items with independent demand

48. Demand for a given item is said to be dependent if
A. it originates from the external customer
B. there is a clearly identifiable parent
C. there is a deep bill of materials
D. the finished products are mostly services (rather than goods)
E. the item has several children

49. Producer's risk is the probability of
A. accepting a good lot
B. rejecting a bad lot
C. accepting a bad lot
D. rejecting a good lot
E. none of the above

50. Which of the following statements about the basic EOQ model is false
A. if annual demand were to increase, the EOQ would increase
B. if the ordering cost were to increase, the EOQ would rise
C. if annual demand were to double, the EOQ would also double
D. if the setup cost were to decrease, the EOQ would fall
E. all of the above statements are false