

國立中央大學94學年度碩士班考試入學試題卷 共 4 頁 第 1 頁  
所別：工業管理研究所碩士班 乙組 科目：生產作業與管理

單選題 (2\*50 = 100分)

1. A series of projects that are organized in such a way that each project utilizes people from different functional areas is using which of the following organizational structures?  
A) Matrix project ; B) Integrated Task Force ; C) Functional project ; D) Pure project ; E) Cross-functional flexible team
2. A simple project listing of five activities, their predecessors and their respective time estimates are presented below:

Activity	Immediate Predecessor	Time in Days
A	None	3
B	A	2
C	A	1
D	B and C	3
E	D	4

- Using the Single Time Estimate CPM procedure, what is the Latest Finish Time for the last activity in this project (i.e., the total time to complete the project)?  
A) 10 days; B) 7 days; C) 8 days; D) 12 days; E) 9 days
3. Which of the following best describes the term cycle time?  
A) Average time between completions of successive units  
B) Ratio of the time a resource is activated over its use  
C) Can be no more that 60 minutes  
D) The same as utilization  
E) The labor content of the item being measured
4. According to Little's Law, which of the following ratios is used to find throughput time?  
A) Cycle time/Process time ; B) Throughput time/Process velocity ;  
C) Process velocity/Throughput time ; D) Work-in-Process/Throughput rate ; E) Value added time/Process velocity
5. To reduce process throughput time you might try which of the following actions?  
A) Perform activities in parallel; B) Change the sequence of activities;  
C) Reduce interruptions; D) Acquire additional equipment; E) All of the above
6. Design for manufacturing and assembly delivers product improvements by emphasizing which of the following?  
A) Reducing product quality during the assembly process  
B) Simplification of the product by reducing the number of separate parts  
C) Reducing equipment in the production process  
D) Design products so they can be manufactured by a virtual factory  
E) Designing products that customers will want
7. Assume a fixed cost for a process of \$15,000. The variable cost to produce each unit of product is \$10 and the selling price for the finished product is \$25. Which of the following is the number of units that has to be produced and sold to break-even?  
A) 500 units ; B) 667 units ; C) 790 units ; D) 900 units ; E) 1,000 units
8. Which of the following is not an analytical tool used in quality improvement programs?  
A) Run charts; B) Pass charts; C) Cause and effect diagrams; D) Opportunity flow diagrams; E) Pareto charts
9. With which of the following should we use an "X-bar" chart based on sample means to monitor process quality?  
A) Grades in a freshman "pass/fail" course; B) Tire pressures in an auto assembly plant; C) Vehicles passing emissions inspection; D) Computer software errors; E) Number of units with missing operations
10. Design of experiments is a statistical methodology often used in six-sigma projects. It aims to accomplish which of the following?  
A) Keep careful track of the occurrences of each possible defect  
B) Determine the cause and effect relationships between process variables and output  
C) Report defects to management on a Pareto chart  
D) Carefully change each individual process variable until the cause of a defect is found  
E) Eliminate defects by finding out who is causing them
11. Which of the following is the cost of quality classification for costs such as defects that pass through the system, such as customer warranty replacements, loss of customer or goodwill, handling complaints, and product repair?  
A) Appraisal costs; B) Prevention costs; C) External failure costs; D) Customer return cost; E) Workmanship costs

注：背面有試題

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12. Group technology (GT) is credited with which of the following benefits?  
A) Reducing waiting time between process operations; B) Improving inventory discipline;  
C) Reducing required workforce skills; D) Improved labor relations; E) Improved small group functioning;
13. In designing a JIT plant layout a designer should do which of the following?  
A) Design for work flow balance; B) Locate flexible JIT workstations off line C) Link operations through a push system  
D) Balance capacity using job shop analysis; E) Always keep operations on a single floor of the factory
14. In trying to implement a JIT production system you should work with vendors to do which of the following?  
A) Reduce lead times; B) Focus workstation capacities; C) Backflush; D) Provide quality at the source; E) Implement group technology
15. Which of the following is a JIT technique that has been successfully applied in service firms?  
A) Decision trees; B) Level the facility load; C) Linear programming; D) Fully utilize capacity; E) Backflushing
16. Which of the following is not a reason to carry inventory?  
A) To provide a safeguard for variation in raw material delivery time  
B) To take advantage of economic purchase-order size  
C) To maintain independence of operations  
D) To meet variation in product demand  
E) To keep the stock out of the hands of competitors
17. In making any decision that affects inventory size, which of the following costs do not need to be considered?  
A) Holding costs; B) Setup costs; C) Ordering costs; D) Fixed costs; E) Shortage costs
18. Assuming no safety stock, what is the re-order point (R) given an average daily demand of 50 units, a lead time of 10 days and 625 units on hand?  
A) 550; B) 500; C) 715; D) 450; E) 475
19. To take into consideration demand uncertainty in reorder point (R) calculations, what do we add to the product of the average daily demand and lead time in days when calculating the value of R?  
A) The product of average daily demand times a standard deviation of lead time  
B) A "z" value times the lead time in days  
C) The standard deviation of vendor lead time times the standard deviation of demand  
D) The product of lead time in days times the standard deviation of lead time  
E) The product of the standard deviation of demand variability and a "z" score relating to a specific service probability
20. The Pareto principle is best applied to which of the following inventory systems?  
A) EOQ; B) Fixed-time period; C) ABC classification; D) Fixed-order quantity; E) Optional replenishment system
21. Which of the following is an example of a finite population in a queuing system?  
A) People waiting to purchase fuel at a service station  
B) Machines which have randomly spaced service requirements  
C) People waiting in line at a tellers' window in a bank  
D) Patients seeking help from a doctor in a private practice  
E) People standing in line to buy a ticket for a movie
22. Which of the following basic types of production layout formats is one which equipment or work processes are arranged according to the progressive steps by which the product is made?  
A) Job-shop layout; B) Functional layout; C) Flow-shop layout;  
D) Group technology layout; E) Process layout
23. A material requirements planning system is an example of which of the following scheduling systems?  
A) Infinite loading, backward scheduling  
B) Finite loading, backward scheduling  
C) Infinite loading, forward scheduling  
D) Finite loading, forward scheduling  
E) None of the above
24. Which of the following is not a function performed in scheduling and controlling an operation?  
A) Allocating orders and equipment; B) Setting priorities and sequencing jobs; C) Allocating personnel to work centers;  
D) Expediting late orders; E) Reporting bottleneck operations

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25. The effect of the lack of synchronization among supply-chain members is referred to as which of the following?  
A) Forward buying; B) Continuous replenishment; C) Bullwhip effect; D) Metcalf's Law; E) Being out of step
26. In developing an operations strategy, which of the following would be an important product-specific criteria to consider?  
A) Focused factory; B) Production lot-size; C) Supplier after-sale support; D) Learning curve; E) Total quality management
27. Capabilities of a service organization that are derived from activities that transform material or information and tend to provide low cost and high quality advantages are classified as which of the following?  
A) Process-based capabilities; B) Systems-based capabilities; C) Organization-based capabilities;  
D) Globally-based capabilities; E) Market-based capabilities
28. Which of the following is not one of the major strategic operational competitive dimensions that form a company's competitive position?  
A) Cost; B) Delivery speed; C) Delivery reliability; D) Management acumen; E) Coping with changes in demand
29. Various financial data for SunPath Manufacturing for 2002 & 2003 follow.
- |         |                   | 2002      | 2003      |
|---------|-------------------|-----------|-----------|
| Output: | Sales             | \$300,000 | \$330,000 |
| Inputs: | Labor             | \$ 40,000 | \$ 43,000 |
|         | Raw Materials:    | \$ 45,000 | \$ 51,000 |
|         | Energy:           | \$ 10,000 | \$ 9,000  |
|         | Capital Employed: | \$250,000 | \$262,000 |
|         | Other:            | \$ 2,000  | \$ 6,000  |
- What is the percentage change in the energy partial productivity measure for SunPath between 2002 & 2003?  
A) -9.22; B) 2.33; C) -0.53; D) 2.88; E) 10.39
30. When considering outsourcing, what should firms be sure to avoid?  
A) Losing control of non-core activities which don't distinguish the firm  
B) Allowing outsourcing to develop into a substitute for innovation  
C) Giving the outsourcing partner the opportunity to become a strong competitor  
D) Allowing employees transferred to the outsourcing partner to rejoin the firm  
E) Adverse corporate tax implications of asset transfers to the outsourcing partner
31. Highly specialized, low cost per mile, product requiring no packaging, and very high initial investment costs are characteristics of which transportation mode?  
A) Highway; B) Rail; C) Water; D) Pipeline; E) Air
32. Which of the following terms best describes the ability of a company to deliver highly customized products and services to different customers around the world?  
A) Customization; B) High customization; C) Mass customization; D) Global sourcing; E) None of the above
33. Which of the following of Fisher's product categories includes fashionable clothing, personal computers and other products that typically have a very brief life cycle?  
A) Functional products; B) Dysfunctional products; C) Innovative products; D) Bullwhip products; E) Value density products
34. Capacity planning affects which of the following time horizons?  
A) Intermediate-range; B) Long-range; C) Short-range; D) All of the above; E) None of the above
35. The way to build in greater flexibility in your workers is to do which of the following?  
A) Pay higher wages to motivate a willingness to do a variety to tasks  
B) Require a broader range of training  
C) Provide a wide variety of technology to augment workers skills  
D) Institute a "pay for skills" program  
E) Use part-time employees with specialized skills as needed
36. Compared with a service operation, a manufacturing operation's capacity is which of the following?  
A) More dependent on time and location  
B) Subject to more volatile demand fluctuations  
C) Utilization more directly impacts quality  
D) Demand can be smoothed by inventory policies  
E) More capable of reacting to demand fluctuations

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37. A chance node on a decision tree has four possible outcomes worth \$10,000, \$20,000, \$30,000 and minus \$100,000 respectively. The probabilities of these outcomes occurring are assessed as 10%, 25%, 50% and 15% correspondingly. What is the expected value of this chance node?  
A) 6,000; B) 5,000; C) 5,500; D) 5,750; E) 6,250
38. Which of the following forecasting methodologies is considered a qualitative forecasting technique?  
A) Simple moving average; B) Market research; C) Linear regression; D) Focus forecasting; E) Multiple regression
39. Which of the following forecasting methodologies is considered a causal forecasting technique?  
A) Box Jenkins Technique; B) Weighted moving average; C) Leading indicators; D) Historical analogy; E) Focus forecasting
40. A company wants to forecast demand using the weighted moving average. If the company uses two prior yearly sales values (i.e., year 2002 = 110 and year 2003 = 130), and we want to weight year 2002 at 10% and year 2003 at 90%, which of the following is the weighted moving average forecast for year 2004?  
A) 120; B) 128; C) 133; D) 138; E) 142
41. A company has a MAD of 10. Its wants to have a 99.7 percent control limits on its forecasting system. Its most recent tracking signal value is 31. What can the company conclude from this information?  
A) The forecasting model is operating acceptably  
B) The forecasting model is out of control and needs to be corrected  
C) The MAD value is incorrect  
D) The upper control value is less than 20  
E) It is using an inappropriate forecasting methodology
42. Which of the following is not one of the categories of manufacturing inventory?  
A) Raw materials; B) Finished products; C) Component parts; D) Just-in-time; E) Supplies
43. Firms keep supplies of inventory for which of the following reasons?  
A) To maintain dependence of operations  
B) To provide a feeling of security for the workforce  
C) To meet variation in product demand  
D) To hedge against wage increases  
E) In case the supplier changes the design
44. Which of the following is not a reason to carry inventory?  
A) To provide a safeguard for variation in raw material delivery time  
B) To take advantage of economic purchase-order size  
C) To maintain independence of operations  
D) To meet variation in product demand  
E) To keep the stock out of the hands of competitors
45. If it takes a supplier four days to deliver an order once it has been placed and the standard deviation of daily demand is 10, which of the following is the standard deviation of usage during lead time?  
A) 10; B) 20; C) 40; D) 100; E) 400
46. The Pareto principle is best applied to which of the following inventory systems?  
A) EOQ; B) Fixed-time period; C) ABC classification; D) Fixed-order quantity; E) Optional replenishment system
47. A BOM file is called which of the following?  
A) Product structure tree; B) Stocking plan; C) Inventory usage record;  
D) Production parts plan; E) Time bucket schedule
48. Which of the following industry types have high expected benefits from the application of MRP?  
A) Fabricate-to-order; B) Hospitals; C) Assemble-to-order; D) Aircraft manufacturers; E) Oil refineries
49. Which of the following is an input to the master production schedule (MPS)?  
A) Inventory records file; B) The aggregate plan; C) The bill of materials; D) Exception reports; E) Planned order schedules
50. Under the lot-for-lot (L4L) lot sizing technique as used in MRP, we would expect which of the following?  
A) A consistent lag of supply behind demand; B) Minimized carrying costs; C) Minimized set-up costs;  
D) A just in time management philosophy; E) Minimized quality problems