請注意，答題時請清楚標明題號，並以大寫英文字母（A, B, C, D）作答，否則以零分計算。共五十題，每題兩分。

1. Hoshins are
   A) action plans
   B) functional objectives
   C) strategic plans
   D) all of the above

2. Continuous production is typically used
   A) to produce one item at a time
   B) for processing many different jobs
   C) to produce high-volume standardized products
   D) for very high-volume commodity products

3. In decision analysis, the criterion which will result in a pessimistic decision is
   A) minimax regret
   B) maximax
   C) maximin
   D) equally likely

4. In decision theory, "expected value of perfect information" is the
   A) average expected payoff
   B) value of a decision given perfect information
   C) value of a decision without perfect information
   D) maximum value a decision maker is willing to pay to purchase perfect information

5. Which of the following statements is true concerning decision trees?
   A) The square nodes represent states of nature.
   B) The circle nodes represent decisions.
   C) Decision trees are graphical methods for analyzing a single decision situation.
   D) Decision trees allow the decision maker to see the logic of decision making.

6. When applying the Hurwicz criterion, if the coefficient of optimism is 1.00, then the decision will always be identical to the
   A) maximax criterion
   B) maximin criterion
   C) minimax regret criterion
   D) LaPlace criterion

7. Which of the following is *not* a principle of TQM?
   A) continuous improvement
   B) expanded training for all employees
   C) quality as an important aspect of strategic planning
   D) strict adherence to production schedules is of paramount importance

8. In identifying problems with quality, a flow chart
   A) is based on Juran's finding that most quality problems result from a few causes
   B) is a diagram of an operation or process
   C) is a cause-and-effect diagram
   D) is a graph showing how two variables relate to each other

9. In identifying problems with quality, a scatter diagram
   A) is based on Juran's finding that most quality problems result from a few causes
   B) is a diagram of an operation or process
   C) is a cause-and-effect diagram
   D) is a graph showing how two variables relate to each other

10. Which of the following is *not* true concerning the ISO 9000?
    A) The ISO 9000 committee establishes generic quality standards for manufacturing firms worldwide.
    B) The ISO 9000 committee is a government organization that is a subset of the United Nations.
    C) The ISO 9000 is a guide for using the other four standards in the series 9001 through 9004.
    D) The ISO 9000 does not tell management how to meet requirements but does indicate what is required.

11. Which of the following statements concerning statistical process control is true?
    A) SPC involves taking a random sample to determine if a lot is acceptable.
    B) SPC is used extensively in the U.S., but acceptance has been slow in Japan.
    C) SPC is an approach which directly conflicts with TQM.
    D) SPC is a tool used to prevent poor quality.

12. In TQM
    A) suppliers are expected to deliver quality parts
    B) the focus is to make certain quality is achieved during the production process
    C) the operator identifies quality problems and makes the necessary corrections
    D) all of the above

13. Which of the following statements is true?
    A) Acceptance sampling allows for some acceptable level of poor quality.
    B) SPC is used to determine the quality of raw materials prior to the beginning of the production process.
    C) Acceptance sampling is a critical component of TQM.
    D) SPC is one of the most important tools in acceptance sampling.

14. For a c-chart, a defect is
    A) any scratch, nick, or other blemish that makes the item less desirable
    B) only the defects that make the item unusable
    C) only the defects that cannot be repaired
    D) only the defects that can be repaired

15. The term which reflects an acceptable proportion of defects in a lot to the consumer is
    A) AOQ
    B) LTPD
    C) OC
    D) AQL

16. Which of the following is true concerning producer's risk?
    A) Producer's risk is the probability of accepting a lot in which the fraction of defective items exceeds the LTPD.
    B) Producer's risk is measured by the Greek symbol "beta."
    C) Producer's risk decreases as the sample size is decreased and acceptable number of defects is kept constant.
    D) None of the above statements are true.

17. Which of the following statements concerning "consumer's risk" is false?
    A) Increasing beta will reduce consumer's risk.
    B) Consumer's risk is the probability of rejecting a lot that has an AQL.
    C) The probability of consumer's risk is commonly measured as a Type I error.
    D) All of the above statements are false.

18. Which of the following guidelines for developing an OC curve are true?
    A) To make the OC curve flatter, hold c constant and decrease sample size.
    B) To make the OC curve steeper, hold c constant and increase sample size.
    C) To make consumer's risk higher, hold n constant and raise the value of c.
    D) All of the above are true.

19. Which of the following does *not* involve the quality design process?
    A) reducing the time required to design a new product
    B) minimizing the revisions necessary to make a workable design
    C) ensuring that customer requirements are met
    D) being first to the market, even though the design may not be perfect

20. Which of the following refers to dismantling a competitor's product in order to improve one's own product?
    A) cluster charting
    B) benchmarking
    C) reverse engineering
    D) concurrent design

21. Concurrent design
    A) calls for one stage of design to be finished before another begins
    B) calls for the manufacturer to prepare detailed design decisions of all component parts
    C) uses the "cost plus" approach to set prices
    D) demands complex scheduling techniques

22. A block diagram is
    A) a format for displaying manager's preferences for department locations
    B) a schematic diagram that uses weighted lines to denote location preference
    C) a type of schematic layout diagram that includes space requirements
    D) a network that describes restrictions on the order in which work elements must be performed

23. Which of the following statements is true concerning line balancing?
    A) Increasing the output rate may increase the theoretical minimum number of stations.
    B) The efficiency of the assembly line is optimal when the number of workstations is maximized.
    C) Increasing the output rate will increase the cycle time.
    D) The theoretical number of workstations is usually higher than the actual number of workstations.

24. A group technology technique that reorders part routing matrices to identify families of parts with similar processing requirements is called
    A) block diagramming
    B) line balancing
    C) production-flow analysis
    D) mixed-model sequencing

25. The Internet and the supply chain are
    A) changing the fundamental nature of doing business
    B) blurring the traditional roles of manufacturers, distributors, and suppliers
    C) breaking down geographical barriers
    D) all of the above

26. Which of the following is true concerning the weighted moving average?
    A) The oldest data will generally be given the greatest weight.
    B) If the weighted moving average forecast is 57.3, then the final forecast must be rounded up to 58.
    C) If the most recent periods are too heavily weighted, the forecast might overreact.
    D) The weighted moving average is usually more accurate than a simple moving average.

27. Which of the following is true concerning the exponential smoothing technique?

A) Exponential smoothing is not as popular a forecasting method as the simple moving average.
B) Exponential smoothing requires complicated mathematics.
C) Exponential smoothing weights older data more heavily.
D) Exponential smoothing requires minimal data.

28. Which of the following is true concerning the smoothing constant used in exponential smoothing?
    A) If alpha = 1, there will be less smoothing.
    B) An alpha value = .4 means the forecast for the next period is based on 40% older data and 60% recent data.
    C) If alpha = 0, the forecast for this period considers only the most recent data.
    D) The most commonly used values of alpha are between 0 and .60.

29. Three forecasting models, all using the same data set, are being compared via their MAD values. The MAD value for Model X is 25.6, Model Y is 20.4, and Model Z is 15.2. Which forecasting model is considered the best?
    A) Model X
    B) Model Y
    C) Model Z
    D) Additional information is needed.

30. If the cumulative error for a forecasting model is large and negative, then
    A) the forecasts have all been too low
    B) the model is forecasting too low
    C) the forecasts have all been too high
    D) the model has been forecasting too high

31. When using a tracking signal, action is taken when the tracking signal value is
    A) close to zero
    B) becomes negative
    C) becomes positive
    D) is above some positive limit or below some negative limit

32. All of the following statements concerning inventory management are true *except*
    A) in the past, companies could afford to maintain generous inventory levels and not worry so much about cost
    B) the cost of inventory has increased largely due to product obsolescence
    C) the average cost of manufacturing goods inventory in the U.S. is about 30% of the value of the inventory
    D) maximizing the amount of inventory has become an important objective of inventory management

33. When a company places an order for the same quantity whenever inventory decreases to a reorder point it is *not* using a
    A) continuous inventory system
    B) fixed-order-quantity inventory system
    C) perpetual inventory system
    D) periodic inventory system

34. All of the following statements concerning ABC analysis are true *except*
    A) Class A items demand higher safety stock
    B) Class A items require accurate demand forecasts
    C) Class C items generally have lower carrying costs
    D) Class A items require a continuous inventory system

35. Which of the following statements concerning the EOQ model with noninstantaneous receipt is true?
    A) If d = p then this model reverts to the basic EOQ model.
    B) The daily rate of demand must be greater than the daily production rate.
    C) This model differs from the basic EOQ model because it incorporates the possibility of shortages.
    D) The ordering cost component in this model is the same as

the ordering cost component in the basic EOQ model.

36. The probability that inventory on hand during the lead time is sufficient to meet expected demand is called the
A) service level
B) safety stock
C) reorder point
D) stockout

37. All of the following are major inputs to the MRP process *except*
A) work orders
B) master production schedule
C) inventory master file
D) product structure file

38. All of the following statements concerning the master production schedule are true *except* the
A) MPS does not consider specific resource needs and may actually produce an infeasible schedule
B) quantities on the MPS represent demand forecasts, not production plans
C) quantities on the MPS may only be predictions, not actual customer orders
D) quantities on the MPS may undergo many revisions before the schedule is completed

39. Which of the following is the input that is said to "drive" the MRP system?
A) inventory master file
B) capacity requirements plan
C) master production schedule
D) product structure file

40. The specialized BOM that is appropriate when the product is manufactured in major subassemblies that are later assembled into the final product is called a
A) k-bill
B) modular bill of material
C) phantom bill
D) summarized bill of material

41. Which of the following statements concerning CRP and overloading is true?
A) Revising the master production schedule should be considered before other options such as rerouting jobs to alternative work centers.
B) Overloading can be eased by increasing the percentage of rework necessary.
C) If the planner in charge can identify the capacity problem, CRP can solve it.
D) Capacity planners will typically use options that produce a feasible plan rather than spend time to find the optimal one.

42. All of the following problems have been associated with MRP *except*
A) MRP plans material requirements first, with capacity as an afterthought
B) MRP assumes that lot sizes will continue unchanged or that they have no bearing on lead time
C) it can take as long to record the processing of an item as it does to actually process it
D) using MRP II to conduct "what if?" questions to coordinate company strategy

43. EPR updates MRP II by using:
A) relational database management
B) graphical user interface (GUI)
C) client/server architecture
D) all of the above are part of ERP

44. Which of the following statements concerning the assignment method of allocation is true?

45.

A) The assignment method can be used for minimizing costs but not for maximizing profits.
B) The assignment method does not guarantee optimality in minimizing a maximum value.
C) An optimal solution is reached when the number of columns is equal to the number of rows in the matrix.
D) When the allocation minimizes the sum of assignment values, it is referred to a "bottleneck" problem.

45. Which of the following statements is true concerning changes in the number of kanbans needed?
A) If the percent of safety stock factor doubles, the number of kanbans needed will double.
B) If average demand increases, the number of kanbans needed will decrease.
C) If the container size is reduced by half, the number of kanbans needed will double.
D) If the time it takes to receive new units is reduced by half, the number of kanbans needed will increase by half.

46. Which of the following statements concerning small lot production is true?
A) Small-lot production allows processes to be physically closer together.
B) Workers producing units in small lots tend to let poor quality pass.
C) Small lot production makes processes more independent of each other.
D) In small lot production, quality problems are more difficult to detect.

47. Which of the following is *not* a way to reduce setup time?
A) separate setup tasks into those that can be performed while the machine is running and those that cannot
B) convert as many external setups into internal setups as possible
C) organize the workspace by locating tools and dies near their points of use
D) perform setup activities in parallel

48. Which of the following is *not* true concerning mixed model assembly?
A) Mixed model assembly means at least some quantity of every item is produced daily.
B) Mixed model assembly supports the pull system of production.
C) Mixed model assembly demands larger component inventories.
D) Mixed model assembly assists the company in responding to variations in demand.

49. Since the advent of JIT, all of the following have become trends in supplier policies *except*
A) locate near the customer
B) use large trucks to deliver mixed loads
C) establish small warehouses near customers
D) use standardized containers

50. Total productive maintenance includes all of the following *except*
A) emphasis on the machine operator's role in maintaining the equipment
B) collecting data and identifying signs of deterioration prior to failure
C) designing products that can be produced on existing machines
D) all of the above are part of TPM philosophy