FINAL EXAM

Course # 371014
Applied Operations Mgmt: Manufacturing & Services

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by: Dr. Jae K. Shim, Ph.D., 2009, 279 pages

16 CPE Credit Hours
Technology &
Operations

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Chapter 1 - What Is Production /Operations Management?

1. _____ is not a system of Operation management (OM)

    └─── Planning systems.

    └─── Operating and controlling systems.

    └─── Parallel systems.

    └─── Designing systems.

2. The new models and trends in OM do not include

    └─── Agility

    └─── Make and sell

    └─── Sense and respond

    └─── Modularity

3. Which of the following statement is not true regarding the need for continuous improvement within companies?

    └─── Global development and more open trade have resulted in more companies with which each company must compete.

    └─── Currency differentials among countries have increased.

    └─── The companies with which a company has competed have become better.

    └─── Customer expectations have increased.

4. The tool that is most useful in brainstorming to the root cause of a problem is the

    └─── Histogram.

    └─── Location plot.

    └─── Fishbone diagram.

    └─── X chart.

5. Business Process Reengineering (BPR) means that a company

    └─── Uses a systematic process to design its product in accordance with customer needs.

|_____ Has an objective to automate all of its work.

|_____ Makes a new beginning at evaluating and designing the work processes.

|_____ Has the need for quality improvement at all levels.

6. The performance characteristic of flexibility means

|_____ High quality.

|_____ Lower than industry average costs.

|_____ A quick response to changing markets and demand.

|_____ Delivery of goods or services on schedule.

7. The performance characteristic of cost efficiency means

|_____ High quality.

|_____ Lower than industry average costs.

|_____ A quick response to changing markets and demand.

|_____ Delivery of goods or services on schedule.

8. Which of the following is not a challenge of supply chain management?

|_____ Lead time compression.

|_____ Decreased outsourcing.

|_____ Globalization.

|_____ Shortened product development time.

9. ISO 9000 is the general name used through the European Economic Community for

|_____ Statistical variation measurement system.

|_____ Accepted quality standards.

|_____ Setting upper and lower control limits.

|_____ Benchmarking.

10. _____ examining excellent performers outside the industry and seeing how you can use their best practices.

|_____ Brainstorming.

|_____ Benchmarking.

|_____ Pareto analysis.

|_____ Multiple activity charting.

11. Using the 80/20 rule for analysis involves the

|_____ Cause-and-effect diagram.

|_____ Checksheet.

└───── Pareto analysis.

└───── Scatterplot.

12. Modeling types do not include

└───── Narrative models.

└───── Physical models.

└───── Mathematical models.

└───── Contentious models.

13. What is a decision matrix?

└───── An approach to decision making under risk.

└───── Value of an imperfect estimate.

└───── Value of an elastic decision.

└───── Value of a designed quadrant.

14. Decision-making under certainty and conflict involves three major elements: decision strategy, states of nature and:

└───── Income.

└───── Level scheduling.

└───── Outcome.

└───── Aggregate planning.

Chapter 2 - Tools for Decision Making

15. One weakness of simulation is:

└───── No automatic searching or optimization done.

└───── Replicate the characteristics of a real system.

└───── Limit risk and time consumption.

└───── Allows for time compression scenarios.

16. Of the following, the most suitable short range forecast would be

└───── Technological.

└───── Economic.

└───── Exponential smoothing.

└───── Regression.

17. Subjective forecasting methods include

|_____ Adaptive smoothing.

|_____ Tracking signal.

|_____ Delphi.

|_____ Double exponential smoothing.

18. Which of the following is not true about the mean standard error (MSE)?

|_____ It is a measure of forecasting performance.

|_____ It is similar to the coefficient of variation.

|_____ It can be used in selecting the smoothing constant.

|_____ It provides a substitute for the standard deviation.

19. When using a simple moving average to forecast demand, one

|_____ Gives equal weight to all demand figures.

|_____ Assigns more weight to the more current data.

|_____ Includes new data in the average without discarding earlier data.

|_____ Uses an alpha of between 0 and 1.

20. Which of the pairs is most closely related?

|_____ Coefficient of linear correlation and coefficient of determination.

|_____ Coefficient of determination and standard error of the estimate.

|_____ Running sum of the forecast error and coefficient of linear correlation.

|_____ Mean absolute deviation and technological forecasting.

21. Flexible Manufacturing System (FMS) is most suited for

|_____ Repetitive.

|_____ Batch.

|_____ Job shop.

|_____ Project.

22. The goal of computer-integrated manufacturing (CIM) does not include

|_____ Reduced direct labor.

|_____ Minimum cycle time.

|_____ Minimum cost.

|_____ Information from marketing.

23. Effective utilization is a ratio between expected capacity of a firm and

└─── Manufacturing capacity.

└─── Limited capacity.

└─── Production capacity.

└─── Design capacity.

24. Location decisions

└─── Are easy to optimize.

└─── Are one-time decisions.

└─── Need to be reviewed occasionally.

└─── Start with a site selection.

25. An example of a subjective location factor is

└─── Energy availability and costs.

└─── Water availability and costs.

└─── Taxes.

└─── Appearance

26. When utilizing a point rating scheme for arriving at a location decision

└─── The objectives being considered must be equally important.

└─── Intangible factors cannot be assigned points.

└─── Weights may total 1.00.

└─── The need for judgment is removed.

Chapter 3 - Demand Management and Forecasting

27. The _____ can be used to distribute capacity to demand centers.

└─── Center-of-Gravity Method.

└─── Quadratic programming.

└─── Factor ratings.

└─── Transportation method.

28. Which firm would benefit most by using the transportation method of linear programming?

└─── A retail firm.

└─── Multiple supply, multiple warehouses.

└─── Multiple supply, single warehouse.

└─────── Single supply, multiple warehouses.

29. Location break-even analysis is an economic comparison of locational options based on

└─────── Work-force composition.

└─────── Demand forecasts and orders.

└─────── Variable and fixed cost breakdown.

└─────── Inventory control.

30. The factors that need to be addressed in job design do not include

└─────── Design of work methods

└─────── Work scheduling

└─────── Work measurement

└─────── Design of physical workplace

31. A method of increasing job variety by horizontally loading jobs is

└─────── Autonomous work.

└─────── Job enlargement.

└─────── Job enrichment.

└─────── Quality circles.

32. A(n) _____ curve is a graph or equation that expresses the expected rate of improvement in productivity as more units are produced.

└─────── Incremental cost.

└─────── Gantt.

└─────── Learning.

└─────── Quadratic.

33. The learning curve theory has found useful applications in many areas, excluding:

└─────── Budgeting, purchasing, and inventory planning.

└─────── Setting fixed overhead standards..

└─────── Setting production standards.

└─────── Pricing new products

34. Work sampling is a work measurement methodology that estimates the portion of time and employee utilized in

└─────── Performing maintenance tasks.

└─────── Performing assigned job tasks.

└─────── Performing pre-job planning.

└─────── Performing pure strategy

36. The construction of a highway would best be accomplished by use of a

      |_____ Fixed position layout.

      |_____ Product layout.

      |_____ Process layout.

      |_____ Plant layout.

Chapter 4 - Process Selection and Capacity Planning

37. Characteristics of process or functional layouts are

      |_____ Few tasks.

      |_____ Inflexible equipment.

      |_____ Low employee cost.

      |_____ Smaller investment.

38. Hospitals are generally an example of

      |_____ Flow-line layout.

      |_____ Dominated flow.

      |_____ Process (functional) layout.

      |_____ Cycle time.

Chapter 5 - Facility Location Planning

39. Characteristics of layout by product include

      |_____ Low production cost.

      |_____ Increased process flexibility.

      |_____ Smaller investment.

      |_____ Alert staff.

40. Line balancing

      |_____ Seeks to select the combination of work elements to be performed that would

minimize setup costs.

    |_____ Obtain the desired level of output with the minimum input of labor and other
            resources.

    |_____ Tries to maximize cycle time, and thus output.

    |_____ Is key to the success of JIT.

41. For manufacturing operations, which is not part of a traditional aggregate planning analysis?

    |_____ Work force size.

    |_____ Inventory level.

    |_____ Economies of scale.

    |_____ Production rate.

42. The _____ would be classed as a quadratic programming approach to the aggregate
    planning problem.

    |_____ Linear decision rule.

    |_____ Transportation.

    |_____ Search decision rule.

    |_____ Trial-and-error.

Chapter 6 - Design of Work Systems

43. Which aggregate planning method does not generate an optimal solution?

    |_____ Transportation method.

    |_____ Linear decision rule.

    |_____ Trial and error

    |_____ Linear programming..

44. Determining resource requirements through the use of a rough cut approach

    |_____ Results in an optimal solution.

    |_____ Constrains the mathematical form of the problems.

    |_____ Is too time-consuming even with a computer.

    |_____ Relies on judgment to determine the most desirable master production schedule.

Chapter 7 - Facilities Positioning

45. Management coefficients capacity planning relies on

└───── A pseudoproduct.

└───── A restricted product mix.

└───── Bills of labor.

└───── Multiple regression.

46. The two stages of scheduling, in order, are

└───── Dispatching and estimating.

└───── Requisitioning and loading.

└───── Loading and forecasting.

└───── Loading and sequencing.

Chapter 8 - Production Planning Systems: Aggregate Planning and Master Production Scheduling

47. Johnson's rule for job sequencing is used if

└───── The objective is to minimize the completion time for a group of jobs that are to be processed on two machines or at two successive work centers.
└───── The objective is to maximize idle time.

└───── In-process inventory and setup costs are dependent on sequence.

└───── Non-optimal but quick solutions are desired.

48. Which of the following statement is false regarding the master production schedule (MPS)?

└───── The MPS must be desegregated into time-phased requirements for individual products.
└───── The MPS usually states weekly product requirements over a 6- to 12-month time horizon.
└───── The MPS is a forecast.

└───── The MPS is a schedule of when production should be completed.

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50. Which aggregate planning method is most widely used?

└───── Transportation..

└─── Linear decision rule.

└─── Search decision rule.

└─── Trial-and-error.

Chapter 9 - Independent Demand Inventory Systems

51. _____ is not an aggregate planning method.

    └─── Transportation method.

    └─── Simulation.

    └─── Management coefficients model.

    └─── Search decision rule (sdr)

52. The purpose of scheduling is to:

    └─── Desegregate the general production plan into time-phased weekly, daily, or hourly activities.

    └─── Neutralize the average lateness.

    └─── Keep labor and facilities idle.

    └─── Maximize setup costs.

53. The allocation of workloads to specific work is

    └─── Dispatching and estimating.

    └─── Requisitioning.

    └─── Loading.

    └─── Sequencing.

54. Sequencing is a process that determines the priorities job orders should have in the manufacturing process. Sequencing results in priority rules for job orders. T F

    └─── True

    └─── False

55. Which of the following statement is not true regarding the difference between independent demand and dependent demand?

    └─── Independent demand systems supply demand outside the organization, dependent-demand systems supply demand inside.

    └─── The need for independent demand items must be estimated while dependent can be calculated.

    └─── Dependent demand requires EOQ.

    └─── Most dependent demand items are used to produce the independent demand items.

56. ABC analysis

|_____ Determines the relative price per unit of all products.

|_____ Requires an accurate physical inventory.

|_____ Establishes the relative expenditures for all inventory items.

|_____ Is part of Kanban.

57. Service level

|_____ Relates to the percentage of demand not supplied from inventory.

|_____ Can be defined as the percentage of lead times when demand was met from inventory.

|_____ Can be defined as the percentage of lead times when a stockout occurred.

|_____ Cannot be measured accurately.

Chapter 10 - Material Requirement Planning and Just-In-Time Systems

58. The economic order quantity (EOQ) model does not take into account

|_____ Quantity discounts.

|_____ Ordering costs.

|_____ Carrying costs.

|_____ Lead time.

59. The cycle time

|_____ Is the time between orders or between the beginnings of runs.

|_____ Is the rate of finished goods inventory build up.

|_____ Is the rate of work in process completion.

|_____ Is the transfer rate between successive work stations.

60. When lead time and demand are not certain, the firm must carry extra units of inventory, called safety stock size. T F

|_____ True

|_____ False

61. Which of the following is most related to dependent demand?

|_____ Forecasting.

|_____ Distribution by value.

|_____ Critical probability.

|_____ Mrp.

62. Which of the following is not related to Just-in-Time production?

     |_____ Lumpy demand.

     |_____ Insignificant inventory.

     |_____ Pull system.

     |_____ Total quality.

Chapter 11 - Planning and Controlling Projects

63. Dependent demand

     |_____ Should be forecast.

     |_____ Should be calculated.

     |_____ Was developed by the Japanese.

     |_____ Is best applied to finished goods inventory.

64. Manufacturing resources planning (MRPII) does not integrate such information as

     |_____ Work force levels.

     |_____ Just-in-time (JIT) information.

     |_____ Inventory investment.

     |_____ "What if" analyses.

65. The information requirements for the technique MRP do not include

     |_____ Master production schedule.

     |_____ BOM file.

     |_____ Inventory status file.

     |_____ Production activity control.

66. Which one of the following functional business systems supports the production/operations business function?

     |_____ Compensation analysis.

     |_____ Agile technology.

     |_____ Cash management.

     |_____ Sales force automation.

67. _____ support all managerial functions in terms of planning, control, and decision making.

     |_____ Marketing information systems.

     |_____ Management information systems.

|_____ Manufacturing information systems.

|_____ Finance information systems.

68. A variety of manufacturing information systems are used to support computer-integrated manufacturing (CIM). CIM is an overall concept that stresses that the objectives of computer-based systems to manufacturing must be to accomplish which of the following?

|_____ Simplifying or reengineering production processes but not product designs or factory organization.

|_____ Automating production processes but not the business functions that support them.

|_____ Integrating all production and support processes using computer networks, cross-functional business software and other information technologies.

|_____ Integrating the collaboration and communication within the organization.

69. _____ is an overall concept that stresses that the goals of computer use in factory automation must be to: simplify, automate, and I integrate all production and support processes

|_____ Computer-integrated manufacturing (CIM)

|_____ Manufacturing execution.

|_____ Computer-aided manufacturing.

|_____ Process control.

70. _____ are performance monitoring information systems for factory floor operations. The systems include shop floor scheduling and control, machine control, robotics control and process control systems.

|_____ Computer-aided manufacturing (CIM) systems.

|_____ Manufacturing execution systems (MESs).

|_____ Process control systems.

|_____ Machine control systems.

71. _____ are those systems that automate the production process. For example, this could be accomplished by monitoring and controlling the production process in a factory or by directly controlling a physical process, a machine tool, or machines with some humanlike work capabilities.

|_____ Computer-aided manufacturing systems.

|_____ Manufacturing execution systems.

|_____ Process control systems.

|_____ Machine control systems.

72. In a network, total slack refers to

|_____ The amount of time an activity can be delayed without interrupting the critical path.

|_____ The amount of time an activity can be delayed without delaying the early start of a successor activity.

|_____ The amount of time an activity can be delayed without delaying the project completion.

|_____ Tf = es â€" ls.

73. PERT is combined with cost data to produce the Critical Path Method (CPM) to

|_____ Calculate the total project cost inclusive of the additional slack time.

|_____ Solve (1) which jobs to crash and (2) by how much..

|_____ Implement computer-integrated manufacturing concepts.

|_____ Calculate expected activity times.

Chapter 12 - Analysis of Waiting Lines and Queuing

74. The _____ is the time required when extra resources are added to complete the project in the minimum possible time.

|_____ Crash time..

|_____ Normal time.

|_____ CPA time.

|_____ Slack time.

75. PERT is used for

|_____ Determining the optimal product mix.

|_____ Determining product costs.

|_____ Project management.

|_____ Determining the number of servers needed in a fast food restaurant.

76. In PERT, the uncertain activity times are best described by a

|_____ Poisson probability distribution

|_____ Exponential probability distribution.

|_____ Beta probability distribution.

|_____ Normal probability distribution.

77. The reciprocal of the mean interarrival time is known as

|_____ Service rate.

|_____ Utilization rate.

|_____ Utilization factor.

|_____ Mean arrival rate.

Chapter 13 - Quality Control and Continuous Improvement

78. If the arrival rate is greater than the service rate

└─────── The system will never reach steady state.

└─────── The system is in steady state.

└─────── The situation will require changing the discipline.

└─────── A truncated queuing model needs to be considered.

79. For a single-channel system with Poisson arrivals and a constant service time, what can be said of the mean queue length and the mean waiting time compared to when both arrival rates and service rate are Poisson-distributed?

└─────── Both will increase slightly.

└─────── One will increase and one will decrease.

└─────── They will both decrease.

└─────── They will not change.

80. _____ is a probability distribution for service time.

└─────── Binomial.

└─────── Negative exponential.

└─────── Poisson.

└─────── Chi-square.

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