

BSCM – Sample Final Exam

1. If demand increases significantly, which of these manufacturing objectives would suffer most if production levels were held constant:
 - a) **Maximum customer service**
 - b) Minimum inventory investment
 - c) Maximum inventory investment
 - d) Efficient (low cost) plant operation

2. Which of the following strategies produces the shortest delivery lead time?
 - a) Make-to-order
 - b) Assemble-to-order
 - c) **Make-to-stock**
 - d) Chase strategy

3. Which of the following statements is true regarding a process layout?
 - a) Special purpose machinery is used
 - b) **Work flow is lumpy**
 - c) Both a) and b) are true.
 - d) Neither a) nor b) are true.

4. Which of the following is a component of a demand pattern?
 - a) Average deviation.
 - b) Standard deviation
 - c) **Random variation**
 - d) Average variation

5. Which one of the following is a physical supply/distribution activity?
 - a) production activity control
 - b) forecasting
 - c) **packaging**
 - d) work in process

6. Which of the following is NOT a common characteristic of forecasts?
 - a) Forecasts are usually wrong.
 - b) **Forecasts should have a maximum of 10% error.**
 - c) Forecasts are more accurate for groups of items.
 - d) Forecasts are more accurate for nearer periods of time.

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7. Item “A” has a lead time of one week and is made from components “B” and “C”. “B” & “C” have a lead time of 2 weeks. If there is a planned order receipt for item “A” in week #5, when will the orders for “B” & “C” be released?

a) Period 4

		1	2	3	4	5
A	Plnd Order Rec					x
	Plnd Order Rel				x	
B	Plnd Order Rec				x	
	Plnd Order Rel		x			
C	Plnd Order Rec				x	
	Plnd Order Rel		x			

b) Period 3

c) **Period 2**

d) Period 1

8. Forecasts are more accurate for:

a) **Groups of items than for individual items.**

b) Daily periods of time than quarterly periods of time.

c) Individual items than groups of items.

d) Far out future time rather than nearer time periods.

9. Which of the following is NOT a cause of forecast error?

a) Changes in general business conditions.

b) Changes in customer demand.

c) Changes in population demographics.

d) **Changes in computer system.**

10. Demand for an item that is unrelated to the demand for any other item is

a) Dependent demand.

b) Stable demand.

c) Dynamic demand.

d) **Independent demand.**

11. Which of the following is not a characteristic of demand?

a) Seasonality

b) Trend

c) Random variation

d) **Intrinsic**

12. Which of the following forecasting techniques uses mathematical calculations, based on historical data, in developing a forecast?

a) Qualitative

b) **Quantitative**

c) Intrinsic

d) Extrinsic

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13. The master production schedule:
- a) Drives the Production Plan.
 - b) Is driven by the materials requirement plan.
 - c) Considers the availability of all capacity.
 - d) **Has a time frame of one month to one year.**
14. In a level production plan, if the opening inventory was 500 units, sales were forecast at 800 units and the ending inventory was to be 200 units, what will manufacturing plan to produce?
- a) **500 units** $\text{Production} = 800 + 200 - 500 = 500 \text{ Units}$
 - b) 800 units
 - c) 1000 units
 - d) Cannot be calculated from the data given.
15. Given the following information, what is the production rate required per month to achieve level production?

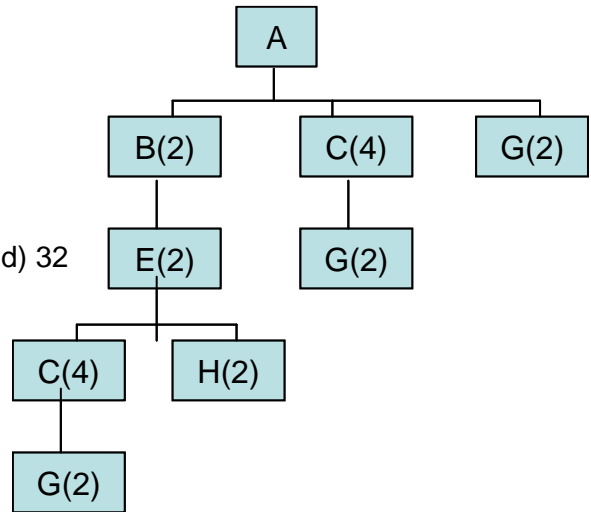
MONTH	JAN	FEB	MAR	APR	MAY	
SALES	200	300	200	400	300	SUM = 1400
PRODUCTION						
PLANNED INV.					500	
Opening Inv.	200					

- a) 220
 - b) 280
 - c) **340** $\text{Production} = 1,400 + 500 - 200 = 1,700/5 = 340$
 - d) 380
16. Which of the following is true of an MRP record?
- a) The current time is the end of the first period.
 - b) The number of periods in the record is called the time fence.
 - c) **An item is considered to be available at the beginning of the time bucket in which it is required.**
 - d) The projected available balance is for the beginning of the time period.
17. _____ are generated by the priority planning system and involve the translation of the priorities, generally given in units of product or some common unit, into hours of work required at each work center in each time period:
- a) **Capacity requirements**
 - b) Capacity bills
 - c) Work center reports
 - d) Bills of labor

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18. Given the following parent-component information, how many Cs are required to make one A?

Parent	A	B	C	E
Component	B(2)	E(2)	G(2)	C(4)
	C(4)			H(2)
	G(2)			



- a) 20 b) 16 c) 24 d) 32

19. Using the parent-component relationships from question 18, which components are purchased?

- a) G only
 b) G and H only
 c) B, C and G only
 d) G, E, and H only

20. (Available time) x (utilization) x (efficiency) is called?

- a) effectiveness
 b) useful capacity
 c) demonstrated capacity
 d) rated capacity

21. Which of the following is NOT an input needed in capacity requirements planning?

- a) open shop orders
 b) rough-cut capacity
 c) lead times
 d) planned order releases

22. In one week a work center produces 130 standard hours of work. The hours available are 120 and 105 hours are actually worked. The utilization is:

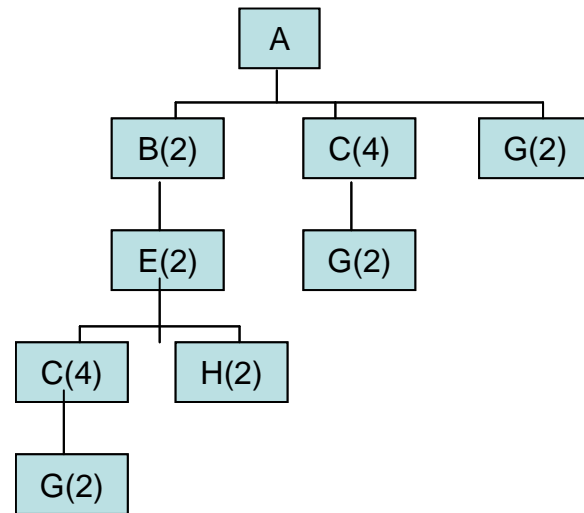
- a) 80.8%
 b) 87.5% (105/120 x 100%)
 c) 92.3%
 d) 108.3%

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23. One hundred units of part A are to be processed on a work center. The setup time is 2 hours and the run time per piece is 10 minutes. The total time will be:
- 2 hours 10 minutes
 - 2 hours 100 minutes
 - 1000 minutes
 - 1120 minutes (120 minutes setup + (100 x 10) = 1,120)**

24. Which of the following statements is best.
- The planned order receipt date is the date the order is needed.
 - When an order is released it becomes a scheduled receipt.
 - Scheduled receipt dates are automatically revised by the system.
 - a) and b) are both true.**

25. Choose the best statement? (Use BOM in question #18)
- item B is the parent of item C.
 - item C is the parent of item E.
 - item A is the parent of item B.**
 - item A is the parent of items B, D, and E



26. An MRP planned order receipt takes place when there is
- gross requirements
 - net requirements**
 - scheduled receipts
 - no projected available inventory

27. Which of the following statement is best?
- A bottleneck will control the throughput of all products processed by it**
 - Work centers after the bottleneck should work at full capacity
 - Work centers feeding the bottleneck should work at full capacity
 - none of the above is true

28. The purpose of keeping inventory is to
- allow for production to choose from
 - allow for marketing to have everything they asked
 - make purchasing activities easier
 - allow for independence of production and demand**

29. A company that manufactures snow blowers would be likely to carry which kind of inventory?
- lot size inventory
 - hedge inventory
 - anticipation inventory**
 - spare parts inventory

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30. Which of the following equations is correct?

- a) Assets = Liabilities - Owner's equity
- b) Income = Revenue - Liabilities
- c) Owner's equity = Assets - Liabilities
- d) Revenue = COGS – Expenses

31. The annual cost of goods sold is \$10 million, average inventory is \$2.5 million, owner's equity is \$5 million, and selling expenses are \$4 million. What is the inventory turn?

- a) 2.0
- b) 4.0 (\$10M/\$2.5M)
- c) 1.3
- d) 6.0

32. Annual demand is \$20,000, ordering cost is \$30 per order, cost of carrying is 30%, unit cost is \$10. Calculate the EOQ.

- a) 141

$$\sqrt{\frac{2 \times 2,000 \times 30}{0.30 \times 10}}$$

$$\sqrt{\frac{2AS}{IC}}$$

- b) 200
- c) 447
- d) 632

33. A particular SKU has a lead time of 6 weeks, average demand of 150 units per week, and safety stock of 300 units. The order quantity is 2,000 units, and it is purchased in boxes of 100 units. What is the order point?

- a) 300
- b) 900
- c) 1200 $OP = DDLT + SS (6 \times 150) + 300 = 1,200$
- d) 2000

34. Which is the best statement regarding ABC analysis?

- a) A items usually account for 20% of total value
- b) B items should be given top priority
- c) It is important to manage all inventory items in the same manner
- d) C items typically account for about 5% of the total usage value

35. Which of the following relates to pull concepts?

- a) demands on central supply centers determined by the branch warehouses
- b) demand on supply center is driven by MRP signals
- c) distribution quantities are determined by central supply center

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d) workers are empowered to pull the trigger to stop production

36. The cost of failure to control quality includes:

- a) scrap, rework, spoilage
- b) warranty claims
- c) returned products
- d) all of the above

37. Which of the following would be included in preventing the costs of poor quality?

- a) allow extra time for breaks
- b) keeping buffer inventory between operations
- c) use of statistical process control
- d) separating the defected products from good ones

38. The ideal product from the customer's point of view:

- a) does not waste material or labor
- b) has short setup time
- c) meets or exceeds expectations
- d) has the lowest cost possible

39. Which of the following is considered most important for maintaining a long term supplier partnership?

- a) consistent quality
- b) fastest delivery
- c) lowest cost
- d) geographic proximity

40. An inventory item has a demand of 40 units per week, a lead time of 4 weeks, and safety stock is set at 50 units. Calculate the order point.

- a) 160
- b) 210 $OP = DDLT + SS (40 \times 4) + 50 = 210$
- c) 260
- d) 40

41. If the safety stock is 50 and order quantity is 100 units, what is average inventory?

- a) 50
- b) 75
- c) 100 $(100/2) + 50 = 100$ $Q/2 + SS$
- d) 150

42. Which one of the following is an output from an MRP run?

- a) Exception report

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- b) Scheduled receipts
 - c) Capacity plan
 - d) Master Production Schedule
43. What is the most important aspects of Cycle Counting?
- a) timely updates of inventory records
 - b) matching the inventory balances to the system
 - c) timely detection and correction of errors
 - d) eliminate physical inventory
44. When an MRP report generated, where is the first place one should look?
- a) inventory levels
 - b) planned order receipts
 - c) gross requirements
 - d) exception report
45. What is the most important cost element in physical distribution?
- a) quality cost
 - b) item cost
 - c) transportation cost
 - d) total inventory cost
46. Who is the customer for the production department in a make to stock company?
- a) private label customers
 - b) marketing and sales
 - c) quality department
 - d) all of the above
47. A bill of material should be structured so that:
- a) is an aid in planning
 - b) reflects how the product is built
 - c) satisfy all the users
 - d) all of the above is true
48. Effectivity dates:
- a) allows correct planning of phase in phase out
 - b) is the most effective date for product launch
 - c) desired date of the product to start at a work center
 - d) is the impact date for MRP to be processed
49. Planning horizon should be:
- a) 1 to 2 years long
 - b) at least as long as the longest cumulative lead time

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- c) conveniently short to facilitate easy planning
- d) used for raw materials only

50. Calculate MAD from the following data:

Periods:	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Forecast:	20	20	30	20	25
Actual Sale:	22	18	25	20	19

- a) 14 2 2 5 0 6
- b) 15
- c) 3 (15/5=3)
- d) cannot be calculated from the data above

51. A production plan is:

- a) input to business plan
- b) the plan to coordinate sales with resources
- c) lowest cost plan
- d) to provide a backup plan to MRP

52. Which one of the following is considered the single most desirable factor in successful system implementation?

- a) education
- b) short setup and implementation time
- c) use an outside expert as consultant
- d) top management understanding of how system works

53. In materials management, what is needed, how much is needed, when it is needed are questions of:

- a) priority
- b) capacity
- c) marketing
- d) not a concern of materials management

54. Which one of the following is the correct planning hierarchy sequence?

- a) MPS, MRP, PAC, S&OP
- b) Resource Plan, CRP, PAC
- c) Business Plan, Resource Plan, Strategic Plan
- d) MPS, MRP, PAC

55. Which is the best statement describing partnership?

- a) receiving inspection is done by quality personnel
- b) repetitive deliveries are made with standard returnable containers
- c) lowest cost is obtained through team negotiations
- d) supplier carries inventory for the customer

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56. Electronic Data Interchange, EDI:
- a) is used in electronics industry
 - b) improves communication and reduces paperwork
 - c) is not good for automotive industry
 - d) replaces communication between suppliers and customers
57. What is the quickest way to increase capacity?
- a) hire more workers
 - b) buy faster machines
 - c) use overtime
 - d) use sub-contractors
58. Cycle Time is:
- a) time it takes a customer to place an order
 - b) shortest possible setup time
 - c) time it takes to process a product at a work center
 - d) the time between two discrete units of production
59. What is the primary use of Kanban?
- a) an authorization signal for production or movement of materials
 - b) Japanese way of doing business
 - c) used only in automotive for part deliveries
 - d) delivering products to fill empty bins at customer
60. Standard Cost is:
- a) the average cost of purchased items
 - b) the expected cost of material, labor, overhead
 - c) used for keeping inflation at reasonable levels
 - d) is has the lowest cost possible in manufacturing
61. MPS is:
- a) the expected sales including customer orders
 - b) the plan followed by planners only
 - c) used for keeping SOP under control
 - d) is the control handle for management in manufacturing
62. "Focus on the Constraint" is a basic principle of:
- a) Six Sigma
 - b) Theory of Constraints

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- c) Economic Order Quantity
- d) Statistical Process Control

63. In TOC, when the company can produce more than is demanded the constraint is:
- a) Physical resource
 - b) Behavior-based
 - c) External market
 - d) Machine time
64. In Drum-Buffer-Rope, the Drum is:
- a) Stock in front of the constraint
 - b) Communicates between the constraint and the release of materials
 - c) Inventory before the constraint
 - d) Schedule established at the constraint resource
65. In Throughput Accounting which of the following receives first priority?
- a) Reduce operating expenses
 - b) Increase throughput
 - c) Reduce inventory investment
 - d) None of the above
66. Supply chain partners are important in the UN Global Compact Model because?
- a) Firms must find and use the cheapest labor available globally
 - b) Firms must identify the low-cost supplier
 - c) Firms must ensure compliance among their partners
 - d) Firms must force their suppliers to participate
67. Corporate Social Responsibility (CSR) is?
- a) The same as sustainability
 - b) Relates only to responsible use of resources
 - c) Relates only to social responsibility
 - d) An enabler of sustainability

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Answers											
1			13			25			37		49
2			14			26			38		50
3			15			27			39		51
4			16			28			40		52
5			17			29			41		53
6			18			30			42		54
7			19			031			43		55
8			20			32			44		56
9			21			33			45		57
10			22			34			46		58
11			23			35			47		59
12			24			36			48		60

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Answers										
1	a	13	d	25	c	37	c	49	b	
2	c	14	a	26	b	38	c	50	c	
3	b	15	c	27	a	39	a	51	b	
4	c	16	c	28	d	40	b	52	a	
5	c	17	a	29	c	41	c	53	a	
6	b	18	a	30	c	42	a	54	d	
7	c	19	b	31	b	43	c	55	b	
8	a	20	d	32	b	44	d	56	b	
9	d	21	b	33	c	45	c	57	c	
10	d	22	b	34	d	46	b	58	d	
11	d	23	d	35	a	47	d	59	a	
12	b	24	d	36	d	48	a	60	b	

61 d
 62 b
 63 c
 64 d
 65 b
 66 c
 67 d

Alan L. Milliken