LEBANESE ASSOCIATION OF CERTIFIED PUBLIC ACCOUNTANTS
MANAGERIAL ACCOUNTING December 2017 KEY

MULTIPLE CHOICE QUESTIONS (45%)

1	C		16	A
2	A		17	C
3	B		18	A
4	A		19	B
5	D		20	B
6	B		21	D
7	D		22	A
8	B		23	B
9	A		24	D
10	D		25	C
11	B		26	A
12	A		27	C
13	A		28	D
14	D		29	C
15	A		30	C

QUESTIONS

Question 1: (10%)
Required:
1. Calculate the average production cycle.
2. Calculate the average collection cycle.
3. Calculate the average payment cycle.
4. Calculate the cash conversion cycle.

1. Average production cycle:
Average inventory = (beginning inventory + ending inventory) ÷ 2
                = ($8,000+$5000) ÷ 2 = $6,500
Inventory turnover = cost of goods sold ÷ average inventory
                = $312,000 ÷ $6,500 = 48 times
Production cycle   = 365 ÷ inventory turnover = 365 ÷ 48 = 7.6 days.

2. Average collection cycle:
Average accounts receivable = (beginning accounts receivable + ending accounts receivable) ÷ 2
=($18,000 + $16,000) ÷ 2 = $17,000

Accounts receivable turnover = credit sales ÷ average accounts receivable
= $450,000 ÷ $17,000 = 26.5 times

Collection cycle = 365 ÷ accounts receivable turnover rate
= 365 ÷ 26.5 = 13.8 days

3. Average payment cycle:

Average accounts payable = (beginning accounts payable + ending accounts payable) ÷ 2
= ($7,000+ $5,000) ÷ 2 = $6,000

Accounts payable turnover = cost of goods sold ÷ average accounts payable
= $312,000 ÷ $6,000 = 52 times

Accounts payable cycle = 365 ÷ accounts payable turnover
= 365 ÷ 52 = 7.0 days

4. Cash conversion cycle:

Cash conversion cycle = production cycle + collection cycle – payment cycle
=7.6 + 13.8 – 7.0 = 14.4 days

Question 2: (10%)
Required:
Find the expected risk and return for the long-term government bond for next year.

Solution:
Expected Return of Long-Term Bond

State of the Economy	Probability of Economic State (a)	Return in Economic State (b)	Probability x Return (a)x(b)	Result (c)= (a)x(b)
Boom	25%	2%	25% x 2%	0.50%
Steady	55%	5%	55% x 5%	2.75%
Recession	20%	10%	20% x 10%	2.00%
Expected return = 0.50% + 2.75% + 2.00% = 5.25%				

Variance of Long-Term Bond

State of the Economy	Probability of Economic State (a)	Return in Economic State r_i	Difference Squared $(r_i -$ expected return$)^2$ (b)	Probability x Difference^2 (a)x(b)
Boom	0.25	0.02	$(0.02-0.0525)^2=$ 0.00105625	0.000264
Steady	0.55	0.05	$(0.05-0.0525)^2=$ 0.00000625	0.000003
Recession	0.20	0.10	$(0.10-0.0525)^2=$ 0.00225625	0.000451
Variance Sum of squared difference times probability of that outcome = 0.00071875				

The standard deviation is the square root of the variance, so:
Standard deviation = $(0.00071875)^{1/2}$ = 0.026809513 ~ 2.68%

Question 3: (20%)
Required:
Prepare the following budgets and schedules for the year, showing both quarterly and total figures:
1. A sales budget and a schedule of expected cash collections.
2. A production budget.
3. A direct materials purchases budget and a schedule of expected cash payments for material purchases.

Solution:

1. **the sales budget is prepared as follows:**

	Year 2 Quarter				
	1	2	3	4	Year
Budgeted sales in units	40,000	60,000	100,000	50,000	250,000
Selling price per unit	X $8	X $8	X $8	X $8	X $8
Total sales	$320,000	$480,000	$800,000	$400,000	$2,000,000

Based on the budgeted sales above, the schedule of expected cash collection is prepared as follows:

	Year 2 Quarter				
	1	2	3	4	Year
Accounts receivable, beginning balance	**$65,000**				$ 65,000
First quarter sales	$320,000x75% = **$240,000**	$320,000x25% = **$80,000**			$ 320,000
Second quarter sales		$480,000x75% = **$360,000**	$480,000x25% = **$120,000**		$ 480,000
Third quarter sales			$800,000x75% = **$600,000**	$800,000x25% = **$200,000**	$ 800,000
Fourth quarter sales				$400,000x75% = **$300,000**	$ 300,000
Total cash collections	**$305,000**	**$440,000**	**$720,000**	**$500,000**	**$1,965,000**

2. Based on the sales budget in units, the production budget is prepared as follows:

	Year 2 Quarter					Year 3 Quarter	
	1	2	3	4	Year	1	2
Budgeted sales (units)	40,000	60,000	100,000	50,000	250,000	70,000	80,000
Add desired ending inventory of finished goods●	18,000	30,000	15,000	21,000*	21,000	24,000	
Total needs	58,000	90,000	115,000	71,000	271,000	94,000	
Less beginning inventory of finished goods	12,000	18,000	30,000	15,000	12,000	21,000	
Required production	46,000	72,000	85,000	56,000	259,000	73,000	

●30% of the following quarter's budgeted sales in units.
* 30% of the budgeted Year 3 first quarter sales

3. based on the production budget figures, raw materials will need to be purchased during the year as follows:

	Year 2 Quarter					Year 3 Quarter
	1	2	3	4	Year	1
Required production (units)	46,000	72,000	85,000	56,000	259,000	73,000
Raw materials needed per unit (pounds)	X 5	X 5	X 5	X 5	X 5	X 5
Production needs (pounds)	230,000	360,000	425,000	280,000	1,295,000	365,000
Add desired ending inventory of raw materials (pounds)●	36,000	42,500	28,000	36,500*	36,500	
Total needs (pounds)	266,000	402,500	453,000	316,000	1,331,500	
Less beginning inventory of raw materials (pounds)	23,000	36,000	42,500	28,000	23,000	
Raw materials to be purchased (pounds)	243,000	366,500	410,500	288,000	1,308,500	

● ten percent of the following quarter's production needs in pounds
* ten percent of the Year 3 first-quarter production needs in pounds

Based on the raw material purchases above, expected cash payments are computed as follows:

	Year 2 Quarter				
	1	2	3	4	Year 2
Cost of raw materials to be purchased at $0.80 per pound	$194,400	$293,200	$328,400	$230,800	$1,046,800
Accounts payable, beginning balance	$ 81,500				81,500

First quarter purchases	194,400x60% = $116,640	$194,400x40% = $77,760			194,400
Second-quarter purchases		$293,200x60% = $175,920	$293,200x40% = $117,280		293,200
Third-quarter purchases			$328,400x60% = $197,040	$328,400x40% = $131,360	328,400
Fourth-quarter purchases				$230,800x60% = $138,480	138,480
Total cash disbursements	$198,140	$253,680	$314,320	$269,840	$1,035,980

Question 4: (15%)

Required:

1. FS currently allocates store support costs (all costs other than cost of goods sold) to product lines on the basis of cost of goods sold of each product line. Calculate the operating income and operating income as a percentage of revenues for each product line.

2. If FS allocates store support costs (all costs other than cost of goods sold) to product lines using an ABC system, calculate the operating income and operating income as a percentage of revenues for each product line.

Solution:
1.

	Soft Drinks	Fresh Produce	Packaged Food	Total
Revenues	$317,400	$840,240	$483,960	$1,641,600
Cost of goods sold	$240,000	$600,000	$360,000	$1,200,000
Store support cost	$240,000x0.30= 72,000	$600,000x0.30= 180,000	$360,000x0.30= 108,000	360,000
Total costs	$312,000	$780,000	$468,000	$1,560,000
Operating income	$ 5,400	$ 60,240	$ 15,960	$ 81,600
Operating income ÷ Revenues	1.70%	7.17%	3.30%	4.97%

2.

Activity (1)	Cost Hierarchy (2)	Total Costs (3)	Quantity of Cost Allocation Base (4)	Overhead Allocation Rate (5)=(3) ÷ (4)
Ordering	Batch-level	$ 62,400	624 purchase orders	$100 per purchase order
Delivery	Batch-level	$100,800	1,260 deliveries	$80 per delivery
Shelf-stocking	Output unit-level	$ 69,120	3,456 shelf-stocking hours	$20 per stocking-hour

Customer support	Output unit-level	$122,880	614,400 items sold	$0.20 per item sold

	Soft Drinks	**Fresh Produce**	**Packaged Food**	**Total**
Revenues	$317,400	$840,240	$483,960	$1,641,600
Cost of goods sold	$240,000	$600,000	$360,000	$1,200,000
Bottle-return costs	$ 4,800	0	0	$ 4,800
Ordering costs	144x $100= 14,400	336x $100= 33,600	144x $100= 14,400	$ 62,400
Delivery costs	120 x $80= 9,600	876x $80= 70,080	264x $80= 21,120	$ 100,800
Shelf-stocking costs	216x $20= 4,320	2,160x $20= 43,200	1,080x $20= 21,600	$ 69,120
Customer-support cost	50,400x$0.20= 10,080	441,600x $0.20= 88,320	122,400x $0.20= 24,480	$ 122,880
Total costs	$283,200	$835,200	$441,600	$1,560,000
Operating income	$ 34,200	$ 5,040	$ 42,360	$ 81,600
Operating income ÷ revenues	10.78%	0.60%	8.75%	4.97%