Students' Department

H. P. Baumann, *Editor*

AMERICAN INSTITUTE EXAMINATIONS

(Note.—The fact that these answers appear in The Journal of Accountancy should not cause the reader to assume that they are the official answers of the board of examiners. They represent merely the opinions of the editor of the *Students' Department.*)

Examination in Accounting Theory and Practice—Part I

May 15, 1930, 1 P. M. to 6 P. M.

The candidate must answer the first four questions and one other question.

No. 1 (38 points):

You are engaged by the X Company, Inc., manufacturers of cotton cloth, to prepare (a) statement showing cost per pound of cloth sold, (b) profit-and-loss statement for the year 1929 and (c) balance-sheet as at December 31, 1929.

A trial balance, taken from the books and covering the period from June 19 to December 31, 1929, was as follows:

	Dr.	Cr.
Property—real estate and plant (cost)	$ 676,170	
Investments	378,114	
Cash	86,425	
Accounts receivable	17,444	
Inventories, January 1, 1929:		
Raw material—cotton	69,080	
In process	62,437	
Finished goods	86,940	
Fuel	2,097	
Mill supplies	4,910	
Property maintenance	815	
Purchases—raw material	77,594	
" —fuel	4,600	
Expenses	2,116	
Insurance	1,546	
Mill supplies	7,389	
Repairs	3,488	
Property maintenance	2,242	
Taxes	4,023	
Water rent	4,310	
Labor	116,043	
Brokerage	2,770	
Executive salaries	6,400	
Prepaid insurance	2,154	
Bad debts	450	
Yarn account		$ 6,250
Accounts payable		4,362
Sales—finished merchandise		328,757
" —waste		13,250
Reserves:		
For depreciation		384,126
" plant improvement		100,000
Income from investments		8,844
" " rentals		2,233
Wages and salaries accrued		9,128

Capital stock:		
Preferred		$ 400,000
Common		200,000
Surplus and profit and loss		162,607
	$1,619,557	$1,619,557

The items following, representing transactions from January 1 to June 18, 1929 (inclusive), were transferred to the profit-and-loss account as at the latter date:

Sales—finished merchandise		$ 241,882
Purchases—raw material	$ 71,128	
Fuel	4,760	
Expenses	2,279	
Insurance	2,100	
Mill supplies	7,845	
Repairs	3,764	
Property maintenance	1,285	
Taxes (local)	3,600	
Water rent	4,250	
Yarn account	6,250	
Labor	100,468	
Brokerage	3,001	
Executive salaries	4,400	
Income from investments		6,494
" " rentals		1,946
	$ 215,130	$ 250,322

The inventories, by pounds, were as follows:

	Jan. 1 1929	Dec. 31 1929	
Raw material	306,663	150,155	
Goods in process (estimated 50% completed)	101,752	104,287	
Finished product	86,229	23,343	
Purchases of raw material during the year			557,706 lbs.
Waste sales during the year			214,214 "

In the preparation of the cost statement, all manufacturing expenses, with the exception of labor, may be grouped under one caption.

Because of an internal check by processes and accurate waste records, it has been customary to value the inventories on the basis of the cost statement.

Depreciation on fixed assets was determined to be $26,541.

Solution:

The main point in the problem is the valuation of the inventories of raw material, goods in process and finished goods as at December 31, 1929. The raw-material inventory is valued at the cost of the purchases, i. e., $.26667 per pound on the theory of "first in—first out." The finished-goods inventory is valued at cost, i. e., $.94895 per pound. Both of these valuations were obtained from the statement of cost of goods manufactured and sold (exhibit B).

To compute the value of the labor and manufacturing expenses applicable to the goods-in-process inventory at December 31, 1929, it will be necessary to determine the quantity of finished product manufactured during the year. The labor cost and the manufacturing expenses divided by the quantity produced will give the cost per pound of labor and manufacturing expense. The cost per pound of the goods-in-process inventory will be made up of one-half of the cost per pound of labor and manufacturing expense thus determined plus the cost per pound of raw material in the inventory.

Number of pounds manufactured:	
Goods in process, January 1, 1929, ½ of 101,752	50,876
Units requisitioned into production, less waste sales	500,000
Total	550,876
Deduct—goods in process, December 31, 1929, ½ of 104,287	52,143.5
Number of pounds manufactured	498,732.5

Labor cost per pound:

$216,511.00÷498,732.5=$.43412.

Manufacturing expense per pound:

$95,552.00÷498,732.5=$.19159.

Inventory—goods in process, December 31, 1929:

	Pounds	Price per pound	Total
Material	104,287	$.32902	$34,312.62
Labor	52,143½	.43412	22,636.67
Manufacturing expense	52,143½	.19159	9,990.16
Total cost			$66,939.45

Income from rentals is treated as a reduction of manufacturing expense, although it might be considered as other income in the profit-and-loss statement. It may be intended that the executive salaries be included as a part of manufacturing expense, but, because of insufficient information, these salaries are shown as administrative expenses. It should be noted that no mention is made in the problem of any inventories on hand at December 31, 1929, of fuel, mill supplies, or property maintenance.

Key to adjustments:

(1) To transfer fuel, mill supplies, and property-maintenance inventories of January 1, 1929, to the expense accounts.

(2) To reverse the entries to profit-and-loss account of the transaction from January 1, to June 18, 1929 (inclusive).

(3) To set up the depreciation on fixed assets.

"X" Company, Inc.

Balance-sheet—December 31, 1929

Assets

Current assets:			
Cash		$ 86,425.00	
Accounts receivable		17,444.00	
Inventories:			
Finished goods	$ 22,151.42		
Goods in process	66,939.45		
Raw material	40,041.43	129,132.30	$233,001.30

Prepaid insurance			$2,154.00
Investments			378,114.00
Fixed assets:			
Property—real estate and plant (at cost)		$676,170.00	
Less—reserve for depreciation		410,667.00	265,503.00
			$878,772.30

Liabilities and net worth

Current liabilities:			
Accounts payable		$ 4,362.00	
Accrued wages and salaries		9,128.00	$ 13,490.00
Net worth:			
Capital stock:			
Preferred	$400,000.00		
Common	200,000.00	$600,000.00	
Surplus:			
Balance, January 1, 1929	$127,415.00		
Net profit for year ended December 31, 1929 (before federal income taxes)	37,867.30		
Reserve for plant improvements	100,000.00	265,282.30	865,282.30
			$878,772.30

"X" Company, Inc.

Statement of cost of goods manufactured and sold for the year ended December 31, 1929

	Pounds	Price per pound	Amount	Total
Raw materials:				
Inventory, January 1, 1929	306,663	$ .22526	$ 69,080.00	
Purchases	557,706	.26667	148,722.00	
Total	864,369		$217,802.00	
Deduct—inventory, December 31, 1929	150,155	.26667	40,041.43	
Remainder	714,214		$177,760.57	
Deduct—waste sales	214,214		13,250.00	
Raw materials used	500,000	.32902		$164,510.57
Labor				216,511.00
Manufacturing expenses:				
Brokerage			$ 5,771.00	
Fuel			11,457.00	
Expenses			4,395.00	
Insurance			3,646.00	
Mill supplies			20,144.00	
Repairs			7,252.00	
Property maintenance			4,342.00	
Taxes			7,623.00	
Water rent			8,560.00	
Depreciation			26,541.00	
Total			$ 99,731.00	
Less—income from rentals			4,179.00	$ 95,552.00

"X" COMPANY, INC.

Working papers—December 31, 1929

	Trial balance December 31, 1929		Adjustments		Cost of manufacturing and sales		Profit and loss		Balance-sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Property—real estate and plant (cost)	$ 676,170								$ 676,170.00	
Investments	378,114								378,114.00	
Cash	86,425								86,425.00	
Accounts receivable	17,444								17,444.00	
Inventories, January 1, 1929:										
Raw materials—cotton	69,080				$69,080					
In process	62,437				62,437					
Finished goods	86,940				86,940					
Fuel	2,097			(1) $ 2,097						
Mill supplies	4,910			(1) 4,910						
Property maintenance	815			(1) 815						
Purchases—raw material	77,594		(2) $ 71,128		148,722					
Purchases—fuel	4,600		(1) 2,097							
			(2) 4,760		11,457					
Expenses	2,116		(2) 2,279		4,395					
Insurance	1,546		(2) 2,100		3,646					
Mill supplies	7,389		(1) 4,910							
			(2) 7,845		20,144					
Repairs	3,488		(2) 3,764		7,252					
Property maintenance	2,242		(1) 815							
			(2) 1,285		4,342					
Taxes	4,023		(2) 3,600		7,623					
Water rent	4,310		(2) 4,250		8,560					

Labor	116,043		(2) 100,468		216,511					
Brokerage	2,770		(2) 3,001		5,771					
Executive salaries	6,400		(2) 4,400				$ 10,800.00			
Prepaid insurance	2,154								2,154.00	
Bad debts	450						450.00			
Yarn account		$ 6,250	(2) 6,250							
Accounts payable		4,362								$ 4,362.00
Sales—finished merchandise		328,757		(2) 241,882				$570,639		
Sales—waste		13,250				$ 13,250.00				
Reserves:										
For depreciation		384,126		(3) 26,541						410,667.00
For plant improvement		100,000								100,000.00
Income from investments		8,844		(2) 6,494				15,338		
Income from rentals		2,233		(2) 1,946		4,179.00				
Wages and salaries accrued		9,128								9,128.00
Capital stock:										
Preferred		400,000								400,000.00
Common		200,000								200,000.00
Surplus and profit and loss		162,607	(2) 35,192							127,415.00
Depreciation			(3) 26,541		26,541					
Inventories, December 31, 1929:										
Goods in process						66,939.45			66,939.45	
Finished goods						22,151.42			22,151.42	
Raw material						40,041.43			40,041.43	
Cost of manufacturing and sales						536,859.70	536,859.70			
Profit and loss							37,867.30			37,867.30
	$1,619,557	$1,619,557	$284,685	$284,685	$683,421	$683,421.00	$585,977.00	$585,977	$1,289,439.30	$1,289,439.30

Goods-in-process inventory, January 1, 1929	$101,752		$62,437.00
Total manufacturing cost	$601,752		$539,010.57
Goods-in-process inventory, December 31, 1929	104,287		66,939.45
Cost of goods manufactured	$497,465	$ .94895	$472,071.12
Finished-goods inventory, January 1, 1929	86,229	1.00825	86,940.00
	$583,694		$559,011.12
Finished-goods inventory, December 31, 1929	23,343	.94895	22,151.42
Cost of goods manufactured and sold	$560,351	.95808	$536,859.70

"X" Company, Inc.

Statement of profit and loss for the year ended December 31, 1929

Sales—finished merchandise		$570,639.00
Cost of goods sold (exhibit B)		536,859.70
Gross profit on sales		$ 33,779.30
Expenses:		
Executive salaries	$10,800.00	
Bad debts	450.00	11,250.00
Profit from operations		$ 22,529.30
Income from investments		15,338.00
Net profit for the year (before provision for federal income taxes)		$ 37,867.30

No. 2 (12 points):

Electrical sound-producing equipment is leased to a theatre company under a ten-year agreement which provides for (a) the return of the equipment, at the expiration thereof, in good condition, allowing for reasonable wear and tear and for obsolescence; (b) an initial payment of $6,000 plus weekly payments of $300 for the first two years (104 weeks) and $75 per week during the remaining eight years.

The initial payment represents part of the licence fee and entire cost of instalation of equipment.

Fifty per cent. of the amounts payable weekly during the two-year period represents licence fee and the other fifty per cent. insurance and interest under deferred-payment plan.

Subsequent payments represent service and inspection charges.

You may consider five years (260 weeks) as a conservative basis of amortization, regardless of the longer life of the lease, in view of the frequent improvements in motion-picture equipment.

Give specimen initial and weekly entries you would recommend to be set up on the theatre company's books.

Solution:

From the information given in the problem, the following summary may be prepared:

Payments	Installation and licence fees	Insurance and interest	Service and inspection	Total
Initial	$ 6,000.00			$ 6,000.00
Weekly				
104 weeks at $300 per week	15,600.00	$15,600.00		31,200.00
416 weeks at $75 per week			$31,200.00	31,200.00
Total	$21,600.00	$15,600.00	$31,200.00	$68,400.00

As the problem states that a conservative basis of amortization is five years (260 weeks), the total cost of the lease ($68,400) should be written off over that period even though the payments are to continue over a period of ten years. In other words, the first five years will bear the entire expense of $68,400, and the last five years will be charged with no expense, although payments of $75 a week will be made during the second five-year period.

(1) Lease prepayments—sound-producing equipment.	$6,000.00	
Cash		$6,000.00
To record the initial payment in accordance with the lease agreement.		
(2) Lease prepayments—sound-producing equipment	150.00	
Lease expense—sound-producing equipment	150.00	
Cash		300.00
Entry during each of first 104 weeks. One-half of the payment is charged to prepayments account as licence fee; the remainder is charged to expense.		

But the total expense of $68,400 is to be absorbed during the first five years, or 260 weeks; therefore the total charge to expense per week for the first five years must be 1/260 of $68,400, or $263.08. As $150 has already been charged to expense (per entry 2) some entry must be made charging $113.08 to expense. This entry (and the subsequent similar ones) should provide two reserves:

(a) A reserve for amortization of the lease prepayments consisting of:		
Initial payment	$ 6,000.00	
Subsequent payments—$150 for 104 weeks	15,600.00	$21,600.00
(b) A reserve for payments to be made during the last five years—$75 x 260		19,500.00
Total		$41,100.00

Therefore 216/411 of $113.08 should be credited to a reserve for amortization of lease prepayments; and 195/411 of $113.08 should be credited to a reserve for dead rents.

(3) Lease expense—sound-producing equipment...	$113.08	
Reserve for amortization of lease prepayments		$ 59.44
Reserve for dead rents..................		53.64

Entry during each of first 104 weeks.

During the third, fourth, and fifth years, the weekly payment is $75, recorded as follows:

(4) Lease expense—sound-producing equipment...	$ 75.00	
Cash..............................		$ 75.00

For weekly payment.

But the total charge to expense is to be $263.08 per week or $188.08 more than the cash payment. This additional charge to expense will be offset by credits to the two reserves in the ratio of 216 to 195.

(5) Lease expense—sound-producing equipment...	$188.08	
Reserve for amortization of lease prepayments		$98.84
Reserve for dead rents..................		89.24

at the end of five years the accounts will stand as follows:

Lease prepayments—debits:	
Initial payment..................	$ 6,000.00
Subsequent payments—$150 x 104..........	15,600.00
Total..................	$ 21,600.00
Reserve for amortization—credits:	
$59.44 for 104 weeks..................	$ 6,181.76
$98.84 for 156 weeks..................	15,419.04
Total..................	$ 21,600.80
Reserve for dead rents—credits:	
$53.64 for 104 weeks..................	$ 5,578.56
$89.24 for 156 weeks..................	13,921.44
Total..................	$ 19,500.00

The lease-prepayments account can be written off against the reserve for amortization, and payments during the final five years can be recorded as follows:

(6) Reserve for dead rents..................	$ 75.00	
Cash..............................		$75.00

Payments for last 260 weeks.

These charges will exhaust the reserve of $19,500.

No. 3 (15 points):

Selected Securities, Inc., a corporation organized for the purpose of investing in securities, was managed, during the calendar year 1929, by the Specialized Management Corporation under an agreement which included the following provisions:

"Specialized Management Corporation agrees to manage the financial operations of Selected Securities, Inc., and to provide, in addition to financial counsel, all necessary office facilities and personnel. Expenses, such as interests, taxes, legal and accounting fees and custody of securities, will be paid by Selected Securities, Inc.

"Selected Securities, Inc., agrees to pay the Specialized Management Corporation for its services as financial advisor, etc., twelve per cent. of the net profits realized each year and accrued at the close of each year upon securities held. Such compensation shall not be included as an expense in determining the amount of net profit upon which the compensation is payable."

From the following trial balance of Selected Securities, Inc., at December 31, 1929, prepare the journal entries required to bring taxes and management compensation accrued upon the books. Prepare, also, a profit-and-loss statement for the year ended December 31, 1929, and a balance-sheet as at the close thereof.

Determine the liquidating value of the company's stock at December 31, 1929.

Selected Securities, Inc.

Trial balance, December 31, 1929

Cash at bank	$ 30,349.02	
Cash on loan at call	100,000.00	
Securities (at cost) *	1,628,741.20	
Dividends receivable	1,250.00	
Cost of securities sold	1,369,520.00	
Legal fees	5,000.00	
Auditing fees	2,600.00	
Interest paid	8,362.00	
Dividends paid	4,000.00	
Securities sold		$1,507,400.00
Dividends received		28,450.00
Interest received		9,685.32
Rights sold		4,286.90
Capital (40,000 shares, no par value)		1,600,000.00
	$3,149,822.22	$3,149,822.22

Solution:

The two unknown quantities, i. e., income taxes and management compensation, must be determined before the problem can be solved. It is assumed (1) that the dividends of $28,450 were received from domestic corporations and are, therefore, non-taxable; (2) that the interest received of $9,685.32 is not tax exempt; and (3) that the basis of valuing the securities inventories for tax purposes is cost or market, whichever is the lower. The taxable income before management compensation is as follows:

Income:		
Profit on securities sold—		
Selling price	$1,507,400.00	
Cost	1,369,520.00	
Profit	$137,880.00	
Rights sold	4,286.90	
Interest received	9,685.32	
		$151,852.22
Expenses:		
Legal fees	$5,000.00	
Auditing fees	2,600.00	
Interest paid	8,362.00	15,962.00
Taxable income before management compensation		$135,890.22

*The market value of the securities held at December 31, 1929, was $1,657,150. All rights sold were in respect to securities which had been sold at December 31, 1929.

The Specialized Management Corporation is to receive for its services "twelve per cent. of the net profits realized each year and accrued at the close of each year upon securities held." The net profits under the agreement, before federal income taxes is as follows:

Profit as above:		$135,890.22
Dividends received		28,450.00
Profits accrued upon securities held:		
Market value at December 31, 1929	$1,657,150.00	
Cost	1,628,741.20	28,408.80
Net profits (before income tax) subject to management compensation		$192,749.02

The next step in the solution is to determine the amount of the two unknown factors of income tax and management compensation.

Let T = the tax
and let M = the management compensation

Since the tax is 11% of $135,890.22 minus the management compensation,

$$T = .11\ (\$135{,}890.22 - M) \qquad (1)$$
$$\text{or } T = \$14{,}947.92 - .11M \qquad (2)$$

and since the management compensation is 12% of $192,749.02 minus the tax

$$M = .12\ (\$192{,}749.02 - T) \qquad (3)$$

Solving for M, and substituting the value for T in the equation (3), we have

$$M = .12\ (\$192{,}749.02 - (\$14{,}947.92 - .11M)) \qquad (4)$$

Removing the parentheses and changing signs:

$$M = .12\ (\$192{,}749.02 - \$14{,}947.92 + .11M)$$
$$M = \$21{,}336.13 + .0132M$$
$$M - .0132\,M = \$21{,}336.13$$
$$.9868\,M = \$21{,}336.13$$
$$M = \$21{,}621.54$$

Solving for T:

$$T = \$14{,}947.92 - .11M$$
$$T = \$14{,}947.92 - .11\ (\$21{,}621.54)$$
$$T = \$14{,}947.92 - \$2{,}378.37$$
$$T = \$12{,}569.55$$

The candidate should prepare a proof of the computations to ascertain whether or not they are correct. The amount of time required is well spent in most cases.

Proof

Computation of tax:

Taxable income before management compensation	$135,890.22
Deduct—management compensation	21,621.54

Taxable income	$114,268.68
Multiply by	11%
Tax	$12,569.55

Computation of management compensation:

Net profits before tax	$192,749.02
Tax	12,569.55
Net profits after tax	$180,179.47
Multiply by	12%
Management compensation	$21,621.54

Journal entries

Management compensation	$21,621.54	
Accrued management compensation		$21,621.54
To record the amount due to Specialized Management Corporation for its services as financial advisor.		
Surplus (income tax)	12,569.55	
Federal income tax payable		12,569.55
To provide for federal income tax payable for the year ended December 31, 1929.		

SELECTED SECURITIES, INC.

Statement of income and expenses for the year ended December 31, 1929

Income:			
Profit on securities sold:			
Selling price	$1,507,400.00		
Cost	1,369,520.00	$137,880.00	
Rights sold		4,286.90	
Dividends received		28,450.00	
Interest received		9,685.32	
			$180,302.22
Expenses:			
Legal fees		$ 5,000.00	
Auditing fees		2,600.00	
Interest paid		8,362.00	
Management compensation		21,621.54	37,583.54
Net profit before provision for federal income tax			$142,718.68

SELECTED SECURITIES, INC.

Balance-sheet—December 31, 1929

Assets

Cash at bank		$ 30,349.02	
Cash on loan at call		100,000.00	
Securities (at cost. Market value at December 31, 1929, was $1,657,150)		1,628,741.20	
Dividends receivable		1,250.00	$1,760,340.22

Liabilities and net worth

Liabilities:			
Accrued management compensation		$ 21,621.54	
Federal income taxes payable		12,569.55	$ 34,191.09
Net worth:			
Capital stock (40,000 shares, no par value)		$1,600,000.00	
Surplus:			
Profit for year	$142,718.68		
Less:			
Dividends paid	$ 4,000.00		
Provision for federal income taxes	12,569.55		
Total	$ 16,569.55	126,149.13	1,726,149.13
			$1,760,340.22

The liquidating value of the company's stock at December 31, 1929, is determined as follows:

Net worth, per balance-sheet		$1,726,149.13
Excess of market value over cost of securities on hand:		
Market value	$1,657,150.00	
Cost	1,628,741.20	28,408.80
Liquidating value of 40,000 shares outstanding		$1,754,557.93
Liquidating value per share		$43.864