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Students' Department

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Students' Department

EDITED BY H. A. FINNEY

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AMERICAN INSTITUTE OF ACCOUNTANTS EXAMINATION IN ACCOUNTING THEORY AND PRACTICE PART I

NOVEMBER 15, 1923, 1 P. M. to 6 P. M.

The candidate must answer the first three questions and two other questions.

1. (25 points):

The Newton Foundry & Machine Co. has on hand at the beginning of the month \$50,000 worth of steel and, in addition, material sufficient to manufacture 100,000 lbs. of castings.

The following is a summary of transactions of the several departments of the business for April:

The foundry department manufactures castings for its own shops and also for customers. One hundred thousand pounds of castings are made during the month at a cost of 10 cents per pound; 50 per cent. of the product goes to the machine shop at 12 cents per pound; 35 per cent. goes direct to customers at 15 cents per pound; 10 per cent. is defective and 5 per cent. remains on hand at the end of the month.

The machine shop withdraws from stores steel to the value of \$50,000. Productive labor on the product amounts to 100 per cent. of the cost of the material and the factory overhead to 150 per cent. of the productive labor. The finished product of the department is disposed of at cost plus 10 per cent., as follows: 60 per cent. to the assembling department; 10 per cent. to the shipping department to fill customers' orders; 15 per cent. to the storeroom; 5 per cent. is defective and 10 per cent. remains in process.

The assembling department labor and overhead amounts to 20 per cent. of the cost of the product to this department. Ninety per cent. of the product received is completed and delivered to the shipping department, crated and shipped to customers.

Allowing 5 per cent. of factory cost for shipping department expense, 10 per cent. for selling expense and 10 per cent. for profit, prepare departmental factory accounts and trading account to reflect the foregoing transactions embodying the following:

One whole shipment of merchandise was returned by a customer as not being in accordance with specification and unfit for his purpose. The billing price of this shipment was \$10,164; the cost of the assembled product was \$8,000.

Give summary of inventories on hand at the close of the period with comments regarding values and submit suggestions for improvement in the methods of accounting.

Solution:

Before setting up the required accounts it is necessary to reach some conclusion in regard to a number of doubtful points.

First, the problem states, in regard to the machine shop: "The finished product of the department is disposed of at cost plus 10 per cent.,

as follows: 60 per cent. to the assembling department; 10 per cent. to the shipping department to fill customers' orders; 15 per cent. to the store-room; 5 per cent. is defective and 10 per cent. remains in process." This statement is subject to the possible interpretation that the defective stock and the goods in process are valued at cost plus 10 per cent. It seems unlikely, however, that the examiners intended to convey this idea; hence the defective stock and the goods in process are valued at cost.

Second, it does not seem proper to value the defective stock at the full cost; the defective product will undoubtedly go back to the foundry, and will enter into the material cost of the production of castings in future periods. If the defective product is credited out of the cost accounts of the present period at a good product value and charged into the casting costs of subsequent periods at the same value, the machine-shop costs of the present period will be relieved of any charge for the loss due to defective product, and the casting costs of future periods will be made to bear an unreasonably high charge for metal. However, there is no way to arrive at a value for the defective stock other than its cost, and the cost value is therefore used.

Third, a similar question may be raised in regard to the defective castings in the foundry department.

Fourth, it does not seem logical to value the goods in process in the machine shop at 10 per cent. of the total machine-shop costs. If this is done the result is to allocate exactly six times as much labor and overhead to the 60 per cent. which is finished as to the 10 per cent. which is in process. This means as much labor and overhead per unit on the goods in process as on the finished goods—which is quite illogical since the goods in process in that case would be finished. The problem, however, gives no information by which a smaller amount of labor and overhead can be allotted to the goods in process. It might be possible to assume that the goods in process average half completed, and add 50 per cent. (instead of 100 per cent.) for labor, and 75 per cent. (instead of 150 per cent.) for overhead; but this would be in conflict with the terms of the problem, which indicates that the total labor in the machine shop is 100 per cent. of the material, and the overhead is 150 per cent. All things considered, the best thing to do seems to be to value the goods in process at 10 per cent. of the total machine-shop costs.

Fifth, a similar question may be raised in regard to the goods remaining in the inventory in the assembling department.

Sixth, what is the meaning of the statement: "allowing 5 per cent. of factory cost for shipping department expense, 10 per cent. for selling expense and 10 per cent. for profit?" On what are these per cents. based? As factory cost is the only base mentioned, it might be assumed that the three rates were to be based on factory cost. But there is information to the contrary, for it is known that one shipment with an assembled cost of \$8,000 was billed to the customer at \$10,164. The selling price was arrived at as follows.

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Cost assembled	\$ 8,000.00
Add 5% of \$8,000 for shipping-department expense	400.00
Total cost crated	8,400.00
Add 10% of \$8,400 for selling expense	840.00
Total	9,240.00
Add 10% of \$9,240 for profit	924.00
Selling price	\$10,164.00

Seventh, in setting up the trading account is it to be assumed that the selling expense was exactly equal to the 10 per cent. estimate? If this is the case the selling expense may be shown in the trading account. In this solution it is assumed that the actual selling expense may be different from the 10 per cent. estimate, and consequently no selling expense is shown in the accounts.

The following accounts are set up on the basis of these assumptions:

FOUNDRY

Cost of 100,000 lbs.	\$10,000.00	
		To machine shop 50% (a) \$ 5,000.00
		To trading acct. 35% (b) 3,500.00
		Defective cast'gs 10% (c) 1,000.00
		Inventory—cast'gs 5% (d) 500.00
	\$10,000.00	\$10,000.00

DEFECTIVE CASTINGS

Foundry (c) \$ 1,000.00

INVENTORY—CASTINGS

Foundry (d) \$ 500.00

MACHINE SHOP

Steel	\$ 50,000.00	
Castings	(a) 6,000.00	To assemb. dept. 60% (e) \$117,600.00
Productive labor	56,000.00	To ship'g dept. 10% (f) 19,600.00
Factory overhead	84,000.00	To storeroom 15% (g) 29,400.00
		Defective 5% (h) 9,800.00
		Parts in process 10% (i) 19,600.00
	\$196,000.00	\$196,000.00

INVENTORY—MACHINED PARTS

From machine shop (g) \$32,340.00

DEFECTIVE MACHINED PARTS

From machine shop (h) \$ 9,800.00

MACHINED PARTS IN PROCESS

From machine shop (i) \$19,600.00

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INTERDEPARTMENTAL PROFIT

Bal. (left as a reserve)	\$ 5,112.98	Foundry to mach. shop (a)	\$ 1,000.00
To trading (profit realized)	12,547.02	Machine shop to assembly	
		10% of \$117,600 (e)	11,760.00
		Machine shop to ship'g dept.	
		10% of \$19,600 (f)	1,960.00
		Machine shop to stores	
		10% of \$29,400 (g)	2,940.00
	<u>\$17,660.00</u>		<u>\$17,660.00</u>
	<u><u>\$17,660.00</u></u>		<u><u>\$17,660.00</u></u>
		Balance down	\$ 5,112.98

ASSEMBLING DEPARTMENT

From mach. shop (e)	\$129,360.00	To ship'g dept. 90% (j)	\$139,708.80
Labor and overhead—20%	25,872.00	Inven.—down 10%	15,523.20
	<u>\$155,232.00</u>		<u>\$155,232.00</u>
	<u><u>\$155,232.00</u></u>		<u><u>\$155,232.00</u></u>
Inventory	\$ 15,523.20		
Returned goods (o)	8,000.00		

SHIPPING DEPARTMENT

From machine shop (f)	\$ 21,560.00	Cost of goods ship'd (k)	\$169,332.24
From assemb. dept. (j)	139,708.80		
Shipping dept. expense:			
5% of \$161,268.80	8,063.44		
	<u>\$169,332.24</u>		<u>\$169,332.24</u>
	<u><u>\$169,332.24</u></u>		<u><u>\$169,332.24</u></u>

ACCOUNTS RECEIVABLE

Castings sold: (1)		Returned sale (n)	\$ 10,164.00
35,000 lbs. at 15c.	\$ 5,250.00		
Mach'd goods sold: (m)			
Cost ship'd	\$169,332.24		
Slg. exp.—10%	16,933.22		
	<u>186,265.46</u>		
Profit—10%	18,626.54		
Total sell'g price	\$204,892.00		

TRADING ACCOUNT

Cost of cast'gs sold (b)	\$ 3,500.00	Sales of castings (1)	\$ 5,250.00
Cost of machined goods sold (k)	169,332.24	Sales of mach. goods (m)	204,892.00
Returned sale (n)	10,164.00	Cost of ret'd goods (o)	8,000.00
Gross profit—down	35,145.76		
	<u>\$218,142.00</u>		<u>\$218,142.00</u>
	<u><u>\$218,142.00</u></u>		<u><u>\$218,142.00</u></u>

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Total gross prof.—down	\$ 47,692.78	Gross profit—down	\$ 35,145.76
		Interdepartmental profit realized	(p) 12,547.02
	\$ 47,692.78		\$ 47,692.78

EXPLANATION OF LETTERED ENTRIES

(a) Machine shop	\$ 6,000.00	
Foundry		\$ 5,000.00
Interdepartmental profit		1,000.00
Product costing \$5,000 transferred at \$6,000.		
(b) Trading account	3,500.00	
Foundry		3,500.00
Cost of castings sold.		
(c) Defective castings	1,000.00	
Foundry		1,000.00
Cost of defective castings.		
(d) Inventory—castings	500.00	
Foundry		500.00
Cost of good castings on hand.		
(e) Assembling department	129,360.00	
Machine shop		117,600.00
Interdepartmental profit		11,760.00
Transfer of 60% of product to assembling department at cost plus 10%.		
(f) Shipping department	21,560.00	
Machine shop		19,600.00
Interdepartmental profit		1,960.00
Transfer of 10% of product to shipping de- partment at cost plus 10%.		
(g) Inventory—machined parts	32,340.00	
Machine shop		29,400.00
Interdepartmental profit		2,940.00
Transfer of 15% of product to stores at cost plus 10%.		
(h) Defective machined parts	9,800.00	
Machine shop		9,800.00
Defective goods valued at cost.		
(i) Machined parts in process	19,600.00	
Machine shop		19,600.00
Inventory valued at cost.		
(j) Shipping department	139,708.80	
Assembling department		139,708.80
Cost of machined goods sent to shipping department.		

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(k) Trading account	169,332.24	
Shipping department		169,332.24
Cost of machined goods shipped.		
(l) Accounts receivable	5,250.00	
Trading account		5,250.00
Sales of castings.		
(m) Accounts receivable	204,892.00	
Trading account		204,892.00
Sales of machined goods.		
(n) Trading account	10,164.00	
Accounts receivable		10,164.00
Returned machined goods.		
(o) Assembling department	8,000.00	
Trading department		8,000.00
Cost assembled of returned goods, charged to account containing inventory of assembled goods.		

There is a question as to the proper valuation of this item. If the goods were made on special order and can not be either resold or made acceptable to their original purchaser, the valuation should be greatly reduced. There is no information in the problem by which action can be taken on this point.

(p) Interdepartmental profit	12,547.02	
Trading account		12,547.02
Transfer of interdepartmental profit realized by sales. The amount is determined by de- ducting from the account an amount re- quired to be retained as a reserve against the inventories, as computed below.		

VALUATION OF INVENTORIES

		<i>Reserve for interdepart- mental profit</i>
Foundry:		
Defective stock—at cost	\$ 1,000.00	
Good stock—at cost	500.00	
Machine shop:		
Defective stock—5% of machine-shop product..	\$ 9,800.00	
Less unrealized interdepartmental profit:		
5% of \$1,000 foundry profit	50.00	\$ 50.00
Cost	\$ 9,750.00	
Goods in process—10% of machine-shop product	\$19,600.00	
Less unrealized interdepartmental profit:		
10% of \$1,000 foundry profit	100.00	100.00
Cost	\$19,500.00	

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		<i>Reserve for interdepart- mental profit</i>
Inventory finished parts—15% of machine-shop product	\$32,340.00	
Less unrealized interdepartmental profit:		
15% of \$1,000 foundry profit... \$ 150		150.00
Machine-shop profit	2,940	3,090.00
	3,090.00	2,940.00
Cost	\$29,250.00	
Assembling department:		
Inventory unsold	\$15,523.20	
Less unrealized interdepartmental profit:		
There was \$1,000 of profit added to the goods transferred from the foundry to the machine shop. Sixty per cent. of the product of the machine shop was transferred to the assembling department. Hence \$600 of the foundry profit was included in the cost to the assembly department. As 10% of these goods remain in the assembling department, the unrealized foundry profit is. The machine-shop profit on the goods transferred to the assembling department was \$11,760.		
Unrealized portion—10%	1,176	60.00
	1,176	1,176.00
Total unrealized profit	1,236.00	
Cost	\$14,287.20	
Finished goods returned:		
Cost assembled	\$ 8,000.00	
Interdepartmental profit should be eliminated on the same basis as applied to the assembled goods unsold. These were reduced from \$15,523.20 to \$14,287.20. Hence the returned goods are reduced to 14,287.20/15,523.20 of \$8,000, or.....		
	7,363.02	
Unrealized profit		636.98
Total unrealized profit—left in account as reserve		\$ 5,112.98

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The correctness of these inventories can be tested by setting up accounts as they should be kept, without additions for interdepartmental profit. The same figures for labor and overhead are used as in the preceding accounts. The inventories may be located in the three accounts.

FOUNDRY			
Cost of 100,000 lbs.	\$ 10,000.00	To machine shop	50% \$ 5,000.00
		To customers	35% 3,500.00
		Inventory—defective	10% 1,000.00
		Inventory—good	5% 500.00
	\$ 10,000.00		\$ 10,000.00

MACHINE SHOP			
Steel	\$ 50,000.00	To assem. dept.	60% \$117,000.00
Castings	5,000.00	To shipping dept.	10% 19,500.00
Productive labor	56,000.00	Stores—inventory	15% 29,250.00
Overhead	84,000.00	Inventory—defective	5% 9,750.00
		Inventory—in proc.	10% 19,500.00
	\$195,000.00		\$195,000.00

ASSEMBLING DEPARTMENT			
From machine shop	\$117,000.00	To shipping dept.	90% \$128,584.80
Labor and overhead	25,872.00	Inventory	10% 14,287.20
	\$142,872.00		\$142,872.00

2. (20 points) :

A, B, C and D form a partnership for the purpose of executing certain contracts owned by C. A agrees to allow the partnership the use of a building owned by him, valued at \$50,000, for which he is to receive a fair and adequate rental. B agrees to lend securities valued at \$50,000, stipulating that he as an individual shall receive the equivalent to the income from said securities. C assigns his contracts to the copartnership, valuing them at \$50,000. D agrees to contribute services based upon his knowledge of the processes of manufacture and long experience in the business, which he values at \$50,000.

The books of account are opened with the following journal entry :

Buildings	\$50,000	
Securities	50,000	
Contracts	50,000	
Manufacturing formulas, etc.	50,000	
To A's capital account		\$50,000
B's capital account		50,000
C's capital account		50,000
D's capital account		50,000

No written agreement is drawn but it is understood and mutually agreed that profits shall be divided equally between the four partners.

A manager is appointed with a competent staff, the partners being required to devote little of their time beyond instructing the manager as to their wishes and desires.

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After deducting all expenses there remains a net profit, for the period of operation, of \$200,000, which is applied as follows:

A's drawing account	\$20,000
B's drawing account	20,000
C's drawing account	70,000
D's drawing account	70,000
Undivided	20,000

A and B take exception to the accounts on the ground that C and D are not entitled to withdraw their capital; that they are entitled to one-fourth only of the profits; and that without the use of the property and securities furnished by them (A and B) no profit could have been made.

C and D reply that their contracts and their experience have produced the result and that A and B are getting excellent return for the loan of their properties.

After considerable discussion with no idea of a satisfactory settlement but an express desire to avoid "going to law" it is decided finally to submit the whole matter to arbitration.

You are appointed arbitrator with full powers. Your decision to be final and binding upon all parties.

Present your report and findings, giving reasons for your conclusions.

The opening journal entry must not, of course, be considered as absolute.

Solution:

The opening journal entry was wrong. A and B made no investments, and hence were not entitled to any capital credits. A rented his building to the partnership; he did not invest the building. B loaned his securities to the partnership; he did not invest them. C invested his contracts and D invested his skill and services. If the \$50,000 valuations were agreed upon by the four partners, C and D were entitled to the capital credits which they received.

The problem says that there is a controversy as to how the \$200,000 profit should be divided. It also states that the partners have agreed to divide it equally. Then why the controversy? Divide the profits as agreed, with the result that the partners' accounts will stand as follows (ignoring any drawings, of which nothing is said):

	A	B	C	D	<i>Total</i>
Investments	\$ 50,000	\$ 50,000	\$100,000
Profits—equally	\$ 50,000	\$ 50,000	50,000	50,000	200,000
Totals	\$ 50,000	\$ 50,000	\$100,000	\$100,000	\$300,000

There does not seem to be anything to this problem. There would be something to it if the partners were contemplating liquidation; but the problem does not state that liquidation is intended.

3. (10 points):

Are there any circumstances in which depreciation may be charged against an account other than current profit and loss? If so, cite instances, giving reasons.

Solution:

If the depreciation provided in past periods has been inadequate, and it is desired to correct this condition by making a lump sum addition to the reserve for depreciation, the offsetting debit should be made against

surplus instead of against profit and loss. Surplus should be charged because the correction of depreciation for past periods should not affect the current income.

If an appraisal is being made on a basis of present replacement values less depreciation on replacement values, the asset account will be debited for the excess of the present market value new over the original cost, the depreciation reserve will be credited with the excess of the depreciation on replacement value over the depreciation on cost, and the journal entry will be balanced by a credit to capital surplus or an appraisal or unrealized profit reserve. No entry should be made in the current profit-and-loss account, because current income should not be affected by a revaluation of the fixed assets.

If fixed assets have been written up to a value higher than cost, with an offsetting credit to an appraisal reserve or an unrealized appreciation account, the depreciation thereafter may be computed on the basis of the appraised value. It is customary to charge the current income with the entire depreciation on the appraised value, later making an adjusting entry transferring from the appraisal reserve to surplus the so-called realized appreciation, or the excess of the depreciation on the appraised value over the depreciation on cost. But this might be handled by debiting profit and loss with the depreciation on cost, debiting the appraised reserve with the depreciation on the increase resulting from the appraisal, and crediting the depreciation reserve with the total. This would, in fact, be a more logical method than to charge the entire depreciation to profit and loss, and later make a correcting entry for the realized appreciation; for the current income is understated if the entire depreciation is charged to profit and loss; the transfer of the realized appreciation to surplus account corrects the surplus, but it leaves an incorrect profit-and-loss account.

4. (20 points) :

Corporations L, M, N, O and P decide that it is to their mutual advantage to amalgamate.

The following information is on file regarding these corporations:

	<i>Present capital stock and surplus</i>	<i>Average annual net earnings 10-year period</i>	<i>Appraised value, net assets</i>
L	\$ 5,250,000	\$ 420,000	\$ 4,000,000
M	2,500,000	300,000	3,000,000
N	750,000	150,000	1,200,000
O	500,000	110,000	700,000
P	1,000,000	180,000	1,500,000
	<u>\$10,000,000</u>	<u>\$ 1,160,000</u>	<u>\$10,400,000</u>

The directors of the L corporation suggest that the capitalization of the new company be \$16,000,000 and that each corporation receive its pro rata share in accordance with the present capitalization, L receiving \$8,400,000, M \$4,000,000, N \$1,200,000, O \$800,000 and P \$1,600,000.

The plan is favored by all the companies, subject to the approval of their accountants.

On behalf of the M, N, O and P corporations you are asked to criticize the plan and report, submitting an alternate plan if you consider that

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proposed not equitable to any or all of the companies which you are representing.

Solution:

The proposed method of capitalizing the consolidated company would not be equitable to M, N, O and P, because it would not give them a fair interest in either the assets or the profits. This may be shown as follows:

PROPOSED DISTRIBUTION OF STOCK		
<i>Company</i>	<i>Stock</i>	<i>Per cent.</i>
L	\$ 8,400,000	52½
M	4,000,000	25
N	1,200,000	7½
O	800,000	5
P	1,600,000	10
	\$16,000,000	100
	\$16,000,000	100

In the first place, the proposed distribution of stock would not give the several old companies equitable interests in the assets contributed. The appraised value of the net assets is \$10,400,000. If \$16,000,000 of stock is issued a goodwill account of \$5,600,000 will presumably make up the difference. But let us assume that the consolidated company operates for a number of years, paying out all of its profits in dividends. It is then decided to liquidate. The company still has \$10,400,000 of net assets, in addition to the goodwill, which is of no realizable value. In liquidation the net assets would be distributed among the former stockholders of the five old companies in the ratio of their stockholdings. But this distribution would return to the former stockholders of Company L a larger amount of assets than they contributed, and it would return to the other stockholders a smaller amount of assets than they contributed, as shown below:

<i>Company</i>	<i>Per cent. of stock held</i>	<i>Assets received in liquidation</i>	<i>Assets contributed</i>	<i>Gain</i>	<i>Loss</i>
L	52½	\$5,460,000	\$4,000,000	\$1,460,000	
M	25	2,600,000	3,000,000		\$ 400,000
N	7½	780,000	1,200,000		420,000
O	5	520,000	700,000		180,000
P	10	1,040,000	1,500,000		460,000
	100	\$10,400,000	\$10,400,000	\$1,460,000	\$1,460,000
	100	\$10,400,000	\$10,400,000	\$1,460,000	\$1,460,000

This table shows that the proposed stock distribution is entirely inequitable from the standpoint of the interests allotted to the several groups of stockholders in the assets of the consolidation.

The proposed scheme is just as inequitable from the standpoint of the distribution of profits. The following table shows the profits which would be returned to the former stockholders of the old companies in the event that the consolidated profits remained the same as the total profits of the old companies, or \$1,160,000, and that all of the profits were distributed

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in dividends. It also shows how these profits were contributed, and it shows that the former stockholders of L would receive more profits than they contributed, while the former stockholders of the other companies would receive less profits than they contributed.

<i>Company</i>	<i>Per cent. of stock held</i>	<i>Dividends to be received</i>	<i>Profits contributed</i>	<i>Gain</i>	<i>Loss</i>
L	52½	\$ 609,000	\$ 420,000	\$ 189,000	
M	25	290,000	300,000		\$ 10,000
N	7½	87,000	150,000		63,000
O	5	58,000	110,000		52,000
P	10	116,000	180,000		64,000
	<u>100</u>	<u>\$1,160,000</u>	<u>\$1,160,000</u>	<u>\$ 189,000</u>	<u>\$ 189,000</u>

It is apparent that some other method should be devised—some method which will safeguard the old companies' stockholders both as to their interests in the assets of the consolidation and as to their interests in the profits.

It is proposed, therefore, that stock preferred as to dividends and as to assets be issued to each old company for the amount of the net assets at appraised values. This will safeguard the various groups of stockholders as to their interests in the assets. Going back to the assumption that the consolidated company operated for several years, paying out all profits in dividends, and liquidated with net assets of \$10,400,000, it is apparent that this amount would be just sufficient to pay off the preferred stock, and that since the preferred stock was issued in proportion to the assets contributed, each group of stockholders would share in the liquidating dividend in the same proportion that the assets were contributed.

The next step is to safeguard the stockholders of the old companies as to profits. This can be done by issuing common stock in proportion to the excess of the profits contributed over the dividends to be returned on the preferred stock. In order to determine what the excess profits will be it is necessary to decide upon a dividend rate for the preferred stock. Any rate could be used; we shall take 8 per cent.

COMPUTATION OF EXCESS PROFITS				
<i>Company</i>	<i>Preferred stock—8%</i>	<i>Preferred dividends</i>	<i>Profits contributed</i>	<i>Excess</i>
L	\$4,000,000	\$ 320,000	\$ 420,000	\$ 100,000
M	3,000,000	240,000	300,000	60,000
N	1,200,000	96,000	150,000	54,000
O	700,000	56,000	110,000	54,000
P	1,500,000	120,000	180,000	60,000
	<u>\$10,400,000</u>	<u>\$ 832,000</u>	<u>\$1,160,000</u>	<u>\$ 328,000</u>

The amount of the common stock to be issued for the excess profits may be determined in any way desired; the only thing necessary is that the shares issued to the old companies be proportionate to the excess profits.

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It is suggested that the common stock be of no par value, so that as many shares can be issued as desired without having to place an exorbitant value on the goodwill. It is also suggested that the number of common shares to be issued be determined by dividing the excess profits by 8. This is done because the preferred stock pays dividends of \$8 per share, and because it will be desirable to make the preferred stock participating after the common has received dividends of \$8 per share. The number of shares of no par value common stock to be issued will therefore be computed as follows:

<i>Company</i>	<i>Excess profits</i>		<i>Shares of common stock</i>		
L	\$100,000	÷	\$8	=	12,500
M	60,000	÷	\$8	=	7,500
N	54,000	÷	\$8	=	6,750
O	54,000	÷	\$8	=	6,750
P	60,000	÷	\$8	=	7,500
					<u>41,000</u>

If it is desired to capitalize the new corporation at a total of \$16,000,000, as suggested by L, the common stock can be valued at \$16,000,000 minus \$10,400,000 (the par of the preferred stock) or \$5,600,000.

We have already shown that the method here suggested will safeguard the several groups of stockholders as to their respective interests in the assets. To show that it will result in an equitable distribution of profits let us assume that the new company makes annual profits of \$1,160,000, or the amount of the combined profits of the several companies before the consolidation. If all of these profits are paid in dividends, the stockholders of each old company will receive the same earnings as before the consolidation.

	DIVIDENDS PAID TO OLD STOCKHOLDERS OF					
Preferred dividends: L	M	N	O	P	Total	
8% of \$ 4,000,000	\$320,000					
8% of 3,000,000	\$240,000					
8% of 1,200,000		\$ 96,000				
8% of 700,000			\$ 56,000			
8% of 1,500,000				\$120,000		
8% of \$10,400,000					\$832,000	
Common dividends:						
\$8 on 12,500 shares	100,000					
\$8 on 7,500 "		60,000				
\$8 on 6,750 "			54,000			
\$8 on 6,750 "				54,000		
\$8 on 7,500 "					60,000	
\$8 on 41,000 "					328,000	
Total (equal to profits before consolidation)	\$420,000	\$300,000	\$150,000	\$110,000	\$180,000	\$1,160,000

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Let us now assume that the profits of the consolidation exceed the combined profits of the several companies before the consolidation. To provide equitably for this condition the preferred stock should participate equally with the common stock, dollar for dollar per share, after the common stock has received dividends of \$8 per share. This provision will result in a division of the total profits of the consolidation in the same ratio as the profits of the individual companies.

Assume that the consolidated company makes a profit of	\$1,450,000
The preferred dividend of 8% on \$10,400,000 par will require	832,000
Leaving profits of	\$ 618,000
A dividend of \$8 per share on the 41,000 shares of no par value common stock will require	328,000
Leaving profits of	\$ 290,000

If this is paid out in dividends, it must go to the preferred and common, share and share alike. There are 104,000 shares of preferred and 41,000 shares of common, or 145,000 shares altogether. The \$290,000 remaining profits are sufficient to pay an additional dividend of \$2 per share on both the common and the preferred stock. This makes a total dividend of \$10 per share on each class.

The following table shows the distribution of the total profit, and the fact that the dividends received by the former stockholders of the old companies are proportionate to the profits contributed by the several companies :

<i>Companies</i>	<i>Profits of old companies</i>	<i>Per cent.</i>	<i>Preferred dividends</i>	<i>Common dividends</i>	<i>Total dividends</i>	<i>Per cent.</i>
L	\$ 420,000	36.206	\$ 400,000	\$ 125,000	\$ 525,000	36.206
M	300,000	25.862	300,000	75,000	375,000	25.862
N	150,000	12.931	120,000	67,500	187,500	12.931
O	110,000	9.483	70,000	67,500	137,500	9.483
P	180,000	15.517	150,000	75,000	225,000	15.517
	<u>\$1,160,000</u>	<u>99.999</u>	<u>\$1,040,000</u>	<u>\$ 410,000</u>	<u>\$1,450,000</u>	<u>99.999</u>

5. (25 points) :

The following is a statement of the X Y Z Company, July 1, 1923:

ASSETS	
Cash in banks and on hand	\$ 55,000
Customers' accounts (good)	65,000
Merchandise inventory	80,000
Real estate and building	200,000
Operating equipment	20,000
	<u>\$420,000</u>

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LIABILITIES	
Bills payable	\$ 35,000
Accounts payable	45,000
Encumbrance on real estate and building	50,000
Reserve for building depreciation	20,000
Capital stock preferred	10,000
Capital stock common	20,000
Earned surplus	240,000
	<u>\$420,000</u>

Jones and Smith each own \$10,000 par value of the common stock. They have had a serious dispute with regard to business policy and Smith desires to withdraw from the corporation. As the corporation is a "close" one and Jones is unable to purchase Smith's stock, they consult and request that you outline a plan enabling Smith to retire and not to impair the general credit of the corporation.

Submit your plan and prepare journal entries for putting into effect, on the records of the company, the result of your suggestions.

Prepare a statement of the X Y Z Company after Smith has retired from the business on the basis suggested by you.

Solution:

Presumably Smith will be given bonds or non-voting preferred stock. The par value of the securities he receives should be equal to the book value of his present stock interest. The company now has \$20,000 of common stock, \$10,000 of preferred stock, and \$240,000 of surplus. Preferred stock is participating unless it is definitely stated to be non-participating; hence the preferred stock shares pro-rata in the surplus. Smith's interest is therefore:

Par of stock held	\$10,000
One-third of surplus	80,000
	<u>90,000</u>

If this interest is to be converted into bonds (or stock) it is necessary to change the surplus into bonds (or stock). This means a transfer of surplus into some other account. But Smith's share of the surplus can not be taken out of the surplus account without declaring a dividend, and this would require also a dividend on Jones's stock. This is done by the following entry:

Surplus	\$160,000	
Jones		\$ 80,000
Smith		80,000

To credit the two holders of common stock with their shares of the surplus.

Smith will now take \$90,000 of bonds, turning in his stock and applying his credit for dividends, all of which is recorded as follows:

Treasury stock—common	\$ 10,000	
Smith		80,000
Bonds payable		\$ 90,000

To record issue of bonds to Smith, paid for by return of his stock, and cancellation of liability to Smith for dividend received.

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To close out the account with Jones for the dividend declared to him, an additional issue of common stock may be made; this would be recorded as follows:

Jones	\$ 80,000	
Treasury stock—common		\$ 10,000
Capital stock—common		70,000
To record issue of stock to Jones in payment of dividend to him.		

This leaves the surplus account with a balance of \$80,000. But this surplus is all applicable to the preferred stock. It cannot be left in the surplus account because it would in that case be possible to pay dividends on the common stock and charge them to surplus. This would mean paying dividends on the common stock out of surplus which belonged to the preferred stockholders. Hence a preferred stock dividend should be paid.

Surplus	\$ 80,000	
Capital stock preferred		\$ 80,000
To record the payment of a preferred stock dividend.		

BALANCE-SHEET OF THE X Y Z COMPANY

Cash in banks and on hand	\$ 55,000	Bills payable	\$ 35,000
Customers' accounts (good)	65,000	Accounts payable	45,000
Merchandise inventory	80,000	Encumbrance on real estate	
Real estate and building	200,000	and building	50,000
Operating equipment	20,000	Reserve for building	
		depreciation	20,000
		Bonds payable	90,000
		Capital stock preferred	90,000
		Capital stock common	90,000
	<u>\$420,000</u>		<u>\$420,000</u>

ACTUARIAL (*optional*)

6. (25 points):

The annual sinking fund has been fixed at \$83,290.94 to redeem a bond issue of \$1,000,000 at the end of 10 years. It is argued against this plan that the payments should be \$100,000 per annum. Demonstrate which of these two amounts is the correct one, assuming the fund to be invested meantime at 4 per cent. interest, compounded annually. Show also the amount of the saving effected by the smaller sinking fund, discounted to maturity, and the amount to be returned to the borrower at the end of the period if the larger sinking fund (\$100,000) were adopted.

$$[1.04^{10} = 1.480,244.]$$

Solution:

It is obvious that annual contributions of \$100,000 will more than provide a fund of \$1,000,000, because the contributions alone will amount

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to that sum without additions of interest. The annual contribution of \$83,290.94 may be proved to be correct as follows:

$1,480,244 - 1 = .480,244$ compound interest.

$.480,244 \div .04 = 12,0061$ amount of annuity of 1.

$\$83,290.94 \times 12.0061 = \$99,999.94$ sinking fund accumulated.

The problem also requires the candidate to "show the amount of the saving effected by the smaller sinking fund, discounted to maturity." I do not know what this means. The larger contributions would produce a fund of $\$100,000 \times 12.0061$, or $\$1,200,610$. This would mean that the sinking fund would be $\$200,610$ larger than necessary. But there is no element of saving because the company would still have the $\$200,610$. The question also requires "the amount to be returned to the borrower at the end of the period if the larger sinking fund ($\$100,000$) were adopted." This would be $\$200,610$.

English-speaking Accountants in Paris

The third quarterly meeting of English-speaking Accountants in Paris was held on October 31, 1923, at the Restaurant Langer, Avenue des Champs-Élysées, Paris. Howard Button acted as chairman. The minutes of the preceding meeting were read by the secretary, Oscar Fawcett, and several matters of professional and local interest were discussed. It was decided that the next luncheon would be held on January 30, 1924.

South Carolina Association of Certified Public Accountants

At the annual meeting of the South Carolina Association of Certified Public Accountants held October 24, 1923, the following officers were elected: President, Joseph J. Moorman; vice-president, B. C. Wallace, Jr.; secretary and treasurer, N. E. Derrick.

William C. Heaton and Frederic Worfolk announce the dissolution of partnership. Mr. Heaton will continue his practice at 9 East 46th street, New York and Mr. Worfolk will continue his practice at 15 East 40th street, New York.

Louis G. and Gordon S. Battelle announce the admission to partnership of Horace B. Terry, Don D. Battelle and Loran R. Dodson, continuing under the firm name of Battelle & Battelle at 121 West Second street, Dayton, Ohio.

Beales & Gibson, 350 Madison avenue, New York, announce that Edward V. Begy, Jr., and Martin I. Phillips have been admitted to membership in the firm.

Touche, Niven & Co. announce the opening of an office in the Union Oil building, Los Angeles, California.