Solutions of the midterm exam_2014Winter
ADM3346 Cost Accounting Section M

Question 1 (15)

a. *(4)*

Flow of Production	Physical units	Calculation	Conversion EU
Completed Beginning work-in-process	6,000	6000*(1-2/3) =	2,000
Started and completed(S&C)	27,000	24,000 -6,000 =	18,000
Work in process ending	12,000	12,000*(1-1/2)=	6,000
Accounted for	45,000		26,000

Flow of Production	Physical units	Calculation	Transferred-in EU
Completed Beginning work-in-process	6,000	0 =	0
Started and completed(S&C)	27,000	24,000 -6,000 =	18,000
Work in process ending	12,000	12,000*100% =	12,000
Accounted for	45,000		30,000

b. *(5)*

Flow of Production	Physical units	Calculation	DM EU
Beginning work-in-process	6,000	6000*0=	0
Started and completed(S&C)	27,000	24,000-6,000=	18,000
Work in process ending	12,000	12,000*100%=	12,000
Accounted for	45,000		30,000

Costs	Totals	Direct materials	Conversion	Transferred-in
Costs added during period	58,800	$19,200	$15,600	$24,000
Divided by equivalent units		30,000	26,000	30,000
Equivalent unit costs	$2.04	$0.64	$0.60	$0.80

c. *(6)*

Assignment of costs:	Calculation	
Work in process, beginning		$9,800
Completion of beginning inventory		
DM	0	0
CC	(2,000 × $0.60)	1,200
TI	0	0
Total beginning inventory costs		$11,000
Started and Completed	(18,000 × $2.04)	36,720
Total costs assigned to completed and transferred out units		$47,720

Question 2 (4)

Toche Andersen & Co.
Income Statement
For the month Ended September 30

	Calculation	
Sales revenue	$140*1,000hr	$140,000
Cost of services		
Direct labour	$70*1,000hr	70,000
Overhead allocated	$12*1,000hr	12,000
Overapplied service overhead	($10,000-$12,000)	(2,000)
Gross margin		60,000
Marketing and administration		42,000
Operating income		$18,000

Question 3 (5)

a. *(4)* Incremental analysis:

Revenues will increase by (6,000 × $4.40* = $26,400) + $1,500 =	$27,900
Costs will increase by 6,000 × $3.40**	(20,400)
Fixed overhead will not change	–
No any incremental marketing costs	–
Change in operating income	$ 7,500

Note: * all manufacturing costs per unit= 1.5 + 1.1 +0.8 +1=$4.40
** manufacturing variable costs per unit=1.5 + 1.1 +0.8=$3.40

b. *(1)* Accept the contract.

Question 4 (13)

a. *(8)*

Regression 1 Total material handling costs =$628,680 - $1127.80*Shipments

1) # of shipments seems plausible
2) Adjusted R^2 of 0.19 is not larger than the guideline of 30%; so bad 'fit'
3) t statistic of Fixed cost=628,680.11/7,134.58 =88.11 which is significant but t statistic of X = -1,127.80/2578.40 = - 0.44 which is not larger than 2.00 so insignificant
4) DW=-2<0.87<2 indicating residuals significantly correlated to dependent variable. There may be other factors impact department costs.

Regression 2 Total material handling costs =$237 + 0.12*Value of materials

1) Value of materials seems plausible
2) Adjusted R^2 of 0.91 is much larger than the guideline of 30%; so very good 'fit'
3) t statistic of Fixed cost=236.79/37.98 =6.23 which is significant and t statistic of X = 0.123/0.007 = 17.57 which is larger than 2.00 so significant
4) DW=2.12>2 indicating residuals are not correlated to dependent variable.

b. *(3)* Regression 2 is better to be used for material handling costs.
- Better model – Adjusted R^2 is larger, 91%, which adds value to explanation or prediction power
- coefficients of FC and VC are all significant
- DW> 2 indicating residuals are not correlated to dependent variable

c. Total materials handling costs
= 236 + 0.12 *4,005,000 = $480,837

Question 5 (14)

a. (8)

i. From the debit and credit entry to Direct Materials T-account,
Direct materials ending balance = ($32,000+$431,000) - $403,000 = $60,000.

ii. Actual direct manufacturing labor hours = $380,000/$16 = 23,750 hours
Predetermined Manufacturing overhead rate=$625,000/ 25,000 hr =$25/hour

$$\text{Manufacturing overhead allocated} = \text{Direct manufacturing labour-hours} \times \text{Manufacturing overhead rate}$$

$$= 23{,}750 \text{ hours} \times \$25 = \$593{,}750$$

iii. From Work-in-Process T-account,
Ending Work in Process = $18,000 + $403,000 + $380,000 + $593,750 – $1,307,250
= $87,500

iv. Job No. 219 costs = $38,000 + $16*125hr + $25*125hr = $43,125

vi. The credit entry to Finished Goods Control T-account = (12,250+1,307,250) -39,500
= $1,280,000

Cost of goods sold (before proration) = $1,280,000

b. *(6)*

$$\text{Manufacturing overhead overallocated} = \text{Debits to Manufacturing Overhead Control} - \text{Credit to Manufacturing Overhead Allocated}$$

$$= \$543{,}000 - \$593{,}750$$

$$= \$50{,}750 \text{ overallocated}$$

Proration based on ending balances (before proration) in Work in Process, Finished Goods, and Cost of Goods Sold.

Account balances in each account after proration follows.

Account (1)	Account Balance (2)	Proration of $50,750 Overallocated Manufacturing Overhead (3)	Balance (after Proration) (4)=(2) -(3)
Work in Process	$87,500 (6.22%)	6.22% × $50,750 = $3,156	$ 84,344
Finished Goods	39,500 (2.81%)	2.81% × $50,750 = 1,425	38,075
Cost of Goods Sold	1,280,000 (90.97%)	90.97%× $50,750 = 46,169	1,233,831
Total	$1,407,000(100.00%)	$50,750	$1,356,250

Question 6 (14)

a. *(3)*

Manufacturing overhead cost driver rates:

Setup activity is $1,000/setup = $500,000/500 setups

Machine-related activity is $6.67/machine hour = $4,000,000/600,000 machine hours.

Packing activity is $20/shipment = $5,000,000/250,000 shipments

b. *(4)*

Overhead costs per unit:

Deluxe-entry door is $68.02 per unit

= [($1,000 × 400) + ($6.67 × 300,000) + ($20 × 50,000)] / 50,000 units

Standard-entry door is $15.25 per unit

= [($1,000 × 100) + ($6.67 × 300,000) + ($20 × 200,000)] / 400,000 units.

Manufacturing cost per unit for the deluxe-entry door is $248.02 = $180.00 + $68.02

Manufacturing cost per unit for the standard-entry door is $145.25 = $130.00 + $15.25

c. *(5)*

Yes, the standard door is more profitable than using traditional method because more of the overhead costs should be assigned to the deluxe door when using an ABC system.

Traditional method:

Unit operating income of Deluxe-entry door= 650 – (180+80) =$390

Unit operating income of standard-entry door= 475 – (130+120) =$225

ABC method:

Unit operating income of Deluxe-entry door= 650 – 248.02 =$401.98

Unit operating income of standard-entry door= 475 – 145.25 =$329.75

d. (2)

(up to (2))

The ABC system better captures the resources needed for producing Deluxe-entry and Standard-entry door.

Suggestions:

- Based on the ABC system to make better pricing for Standard-entry door. For example, it might decide to decrease the prices charged for Standard.
- Make better product mix decisions.
- Reduce costs by eliminating processes and activities that do not add value by identifying and evaluating value-added or non-value-added activities.