SPROTT
SCHOOL OF BUSINESS

BUSI 1005 B, C, D, E, F – Management Accounting
Test 1 (90 minutes) February 5, 2016

Name:	
Student #:	

Please identify your Section by putting an "X" in the final column.
If you do not identify your section, or identify the wrong section, you will lose 1 mark.

Section	Professor	Date	Time	X
B	Butler	M/W	1-2:30pm	
C	Wakil	T/Th	2:30-4pm	
D	Wakil	T/Th	1-2:30pm	
E	Butler	W/F	8:30-10am	
F	Gray	M/W	1-2:30pm	

1. There are 45 marks available on this test.
2. This exam comprises of 4 questions and has 12 pages. Please ensure that you have a complete exam paper before starting.
3. Nonprogrammable financial calculator allowed. Electronic language dictionaries are not allowed.
4. **Show your calculations. Marks are awarded for work shown.**

Question 1 (8 marks) (16 minutes)

Harbour Inc. collected the following data for the first six months of the year concerning its overhead costs and machine hours used.

Month	Overhead Costs ($)	Machine Hours
Jan	$62,000	400
Feb	$52,000	320
Mar	$64,000	395
Apr	$58,000	350
May	$57,000	350
June	$54,000	325

Required

a) Harbour suspects that machine hours are driving overhead costs. Use the high-low method to calculate the:
   i. variable cost per machine hour;
   ii. monthly fixed cost.

b) Harbour predicts that 375 machine hours will be used in July. Calculate the estimated overhead cost for July.

c) Why is the high-low method inferior to the regression estimation method (provide 1 reason)?

Question 2 (12 marks) (24 minutes)

The following information pertains to Mariners Co. for the fiscal year 2015 (its first year of business):

	Budgeted Costs	Actual Costs
Direct Materials Used	$130,000	$140,000
Direct Labour Used	$225,000	$250,000
Variable Overhead	$90,000	$100,000
Fixed Overhead	$300,000	$290,000

	Expected	Actual
Direct Labour Hours	10,000	10,600

Ending balances

Work in process inventory	$25,000
Finished goods inventory	$60,000
Cost of goods sold	?

Mariners Co. allocates overhead on the basis of direct labour hours.

Required

a) What amount of prime costs were incurred during 2015?

b) What was the predetermined overhead rate for 2015?

c) Calculate the Cost of Goods Manufactured for 2015.

d) Calculate the amount of Cost of Goods Sold for 2015.

e) What balance exists at the end of 2015 in the manufacturing overhead account (before the over/underapplied overhead is reallocated)?

f) Record the journal entry required per IFRS to allocate the over/underapplied.

Question 3 (13 marks) (26 minutes)

ShipShape Inc., a custom boat manufacturer, began operations on June 1, 2014. It determined that its predetermined overhead rate for the application of overhead would be $60/direct labour hour.

a) ShipShape bought $450,000 of direct materials on account during the year. It only keeps direct materials in its storeroom. Indirect materials go directly to the factory floor.
b) The following information pertains to work done on jobs started during the year:

	S101	S102	S103	Total
Direct materials used	$90,000	$75,000	$150,000	$315,000
Direct labour hours used	1300 hrs	2000 hrs	3000 hrs	6300 hrs
Direct labour rate				$35/hour

c) Jobs S101 and S103 were completed during the year, and job S103 was sold for $800,000 cash.

d) Certain other expenses are as follows:

Depreciation (manufacturing building and equipment)	$85,000
Depreciation (administrative)	25,000
Indirect materials	18,000
Indirect labour	200,000

Required

Record the journal entries related to the above selected information

Question 4 (12 marks) (24 minutes)

Waves Ltd. is considering implementing Activity Based Costing (ABC), and would like to better understand how it would work by having the cost of one of its products, SurfsUp calculated using this method. Waves Ltd. currently produces 2,000 SurfsUp units per year, which sell for $800/unit. Each unit costs $300 in direct material and $200 in direct labour.

Activity	Cost driver	Total Overhead $	Total Driver Use	SurfsUp Driver Use
Purchase orders	# of orders	$120,000	2,400	400
Setups	# of setups	$250,000	500	100
Machine repairs and maintenance	Machine hours	$500,000	75,000	25,000
Quality inspections	# of inspections	$180,000	2,500	1,000

a) Calculate the total cost of producing one unit of SurfsUp using Activity Based Costing.

b) If the current job order costing method allocates overhead on the basis of $50/direct labour hour, and a unit of SurfsUp takes 2 direct labour hours, by how much is the product currently over or under costed?

c) Using the cost determined in part (a), what is the gross margin produced by the sale of a unit of SurfsUp?

d) Describe one advantage and one disadvantage to use ABC.

Solution – Question 1 (8 marks)

i. VC = Change in OH costs/Change in Activity Driver (between high-low points)
= ($62,000-$52,000)/(400-320)
= $10,000/80
= $125/MH

[3 marks]

ii. (using high point)
Total OH Cost = FOH + VOH
$62,000 = FOH + ($125 * 400)
$62,000 = FOH + $50,000
$12,000 = FOH [2 marks]
OR
(using low point)
$52,000 = FOH + ($125 * 320)
$52,000 = FOH + 40,000
$12,000 = FOH

a) TOH = FOH + VOH
TOH = $12,000 + $125/MH * 375MH
TOH = $58,875 [2 marks]

b) The high low method is considered an inferior method because
1) It only uses two points of data (as opposed to ALL points of data)
2) It relies on the extreme points, which may not be in the relevant range
3) Not very accurate

[1 mark for first answer only]

Solution - Question 2 (12 marks)

a) Prime costs = DM used + DL used
= $140,000 + $250,000 = $390,000 [1 mark]

b) POR = expected OH/expected direct labour hours
= (90,000 + 300,000)/10,000
= $39/hour [2 marks]

c) COGM:

Direct materials used:	$140,000
Direct labour used:	250,000
Manufacturing overhead applied (39/hr * 10,600)	413,400
Total manufacturing costs	803,400
Add - WIP beginning	0
Less - WIP ending	(25,000)
COGM	$778,400

[3 marks]

d) COGS:

Beginning FG inventory	$0
Add: COGM	778,400
Less: Ending FG inventory	(60,000)
COGS	$718,400

[1.5 marks]

e) Actual MOH: $100,000 + $290,000 = $390,000
Applied MOH: $39/hour x 10,600 hours = $413,400

Balance: $23,400 overapplied (or $23,400 credit balance) [3 marks]

f)

Manufacturing OH	23,400		
COGS		23,400	[1.5 mark]

Solution – Question 3 (13 marks)

Direct materials inventory	450,000	
Accounts payable		$450,000

(1 mark)

Work in process inventory (.5 account, .5 #)	913,500	
Direct materials inventory (.5 account, .5 #)		315,000
Wages payable/cash (.5 account, 1 #)		220,500
Manufacturing overhead (.5 account, 1 #)		378,000

	DM	DL	MOH
S101= $90,000 + (1300*35) + (1300*60) = 213,500			
S102 = $75,000 + (2000*35) + (2000*60) = 265,000			
S103= $150,000 + (3000*35) + (3000*60) = 435,000			
Totals	**$315,000**	**220,500**	**378,000**

(5 marks)

Finished Goods inventory	648,500	
Work in process inventory		648,500

(2 marks; 1 for accounts and 1 for adding S101 & S103 together)

Cash	800,000	
Sales		800,000

(1 mark)

COGS	435,000	
Finished Goods inventory		435,000

(1 mark)

Depreciation expense **.5**	25,000	
Manufacturing overhead ($85,000+18,000+200,000) **1**	303,000	
Accumulated depreciation **.5**		110,000
Wages payable/Cash **.5**		200,000
Accounts payable/Cash **.5**		18,000

(3 marks)

Solution – Question 4 (12 marks)

a)

Purchase Orders	$120,000/2400 * 400	$20,000
Setups	$250,000/500 * 100	50,000
Machine hours	$500,000/75,000 * 25,000	166,667 (up to $166,750)
Inspections	$180,000/2,500 * 1,000	72,000
		$308,667 (up to $308,750)

[4 marks - 1 mark for taking OH, 1 mark for dividing OH by total driver amount, 1 mark for * by product driver amount, 1 mark for being consistent approach across all lines]

$308,667/2,000 = $154.33^{OH} + $300^{DM} + $200^{DL} = $654.33 [2 marks]
OR 308,750/2000 = $154.38^{OH} + $300^{DM} + $200^{DL} = $654.38

b) It is currently undercosted by $54.33/$54.38 ($600* vs $654.33/654.38) [1 mark]
Job Order Costing method cost: $300+200+(2*50) = $600 [2 marks]

c) $800 - $654.33 = $145.67
OR $800 – $654.38 = $145.62 [1 mark]

d) Advantages:
Better production costing
Better control over overhead costs
Better management decisions as a result of the above [1 mark]
Disadvantages:
More expensive (and time consuming?) to develop and maintain
Does not avoid all arbitrary allocations [1 mark]