

Name: Ver A KEY

ACCT 2102 – Prof. J. M. Turner
Exam #3 Spring 2012

INSTRUCTIONS – Please read before you take the exam. Failure to follow instructions will result in the loss of points.

1. This is a closed book and closed notes exam. You must do your own work without assistance from anyone. Giving or receiving assistance from anyone during the exam will result in a grade of zero and reporting to the Office of Student Integrity. To attest to your compliance with this instruction and the Georgia Tech honor system, please sign the honor pledge below before turning in your exam.
2. To treat all students equally, I do not answer questions during an exam. Answer each question based on the information given. If you think there is a typing error, please let me know.
3. You may use only a calculator supplied by me. You may not use your cell phone or personal computer during the exam. All cell phones must be turned off and placed on the top of your desk in plain view at all times during the exam. Use of your cell phone during the exam is considered cheating and a violation of the Honor System.
4. Each multiple-choice question has only one best answer. If you choose more than one answer, it will be considered an incorrect answer. **Enter your answer to the multiple choice questions on the Scantron sheet provided.** What you enter on the Scantron sheet is your answer for grading purposes. Please totally erase changes on the Scantron or get a clean Scantron form and re-enter your answers. Insert your Scantron form inside of this exam when you turn it in.
5. You are required to show your work on the problems. **If you do not show your work, you will not receive full credit even if you have a correct answer.**

6. There are 11 pages in this exam. Points available are as follows:

Terminology matching – 14 @ 2 points each	28
Problems (3)	27
Multiple choice – 15 @ 3 points each	45
Total	<u>100</u>

Grades will be expressed as a percentage of total available points.

Honor Pledge:

On my honor, I pledge that I have neither given nor received any unauthorized help on this exam.

(Signed)

If you do not want your graded exam returned to the grading bins for this class, please sign below. If you do not sign below, your exam will be placed in the bins for this class if you signed a FERPA waiver.

Do not return my graded exam to the bin: _____

Matching (2 points each) Match each term with the phrase that best defines or describes it. Terms may be used only once. Use capital letters.

A	Activity based pricing
B	Avoidable costs
C	Complementary products
D	Substitute products
E	Common costs
F	Cost plus pricing
G	Customer profitability analysis
H	Economic pricing
I	Incremental (or differential) costs

J	Joint costs
K	Opportunity costs
L	Out-of-pocket costs
M	Physical quantity of output method
N	Relative sales value method
O	Split-off point
P	Sunk costs
Q	Target costing

- A 1 A system that charges customers for the services they consume.
- F 2 A system that sets prices based on costs.
- Q 3 A system that starts with what consumers are willing to pay for a product and tries to design a product at a cost that allows a reasonable profit.
- H 4 A system that ^{sets} prices based on the laws of supply and demand.
- G 5 A way of using activity-based methods to assess which customers are covering the costs they are generating.
- I 6 The increase or decrease in costs incurred by selecting one course of action over another.
- B 7 Costs that can be eliminated if a company takes a particular course of action
- J 8 The costs of the common inputs that result in two or more products
- P 9 Costs incurred in the past that are not relevant to present decisions
- O 10 The point where joint products can be separately identified
- K 11 Value of the benefits foregone when one decision alternative is selected over another
- E 12 Cost incurred for the benefit of multiple departments or products
- N 13 The preferred method of allocating common costs to joint products
- C 14 Those products for which the sales of one may contribute to the sales of another.

The following data relate to Questions 1 & 2.

One of Phoenix Computer's products is WizardCard. The company currently produces and sells 30,000 WizardCards per month, although it has the plant capacity to produce 50,000 units per month. The company only produces enough units to meet current demand. At the 30,000 units-per-month level of production, the average per-unit full cost of manufacturing WizardCards is \$45, consisting of \$15 in variable production costs and \$30 in fixed manufacturing overhead. Phoenix sells WizardCards to retail stores for \$90 each. Computer Marketing Corp. has offered to purchase 10,000 WizardCards per month at a reduced price. Phoenix can manufacture these additional units with no change in fixed manufacturing overhead costs.

- D 1. In deciding whether to accept this special order from Computer Marketing Corp., Phoenix should be least concerned with:
- A. The incremental cost of manufacturing an additional 10,000 WizardCards per month.
 - B. What Computer Marketing Corp. intends to do with the WizardCards.
 - C. The opportunity cost of not accepting the order.
 - D. The \$45 average cost of manufacturing WizardCards.

Average cost includes common fixed costs that are not avoidable; thus, not relevant.

- A 2. If Phoenix decides to accept the special order at a unit sales price of \$55, what is the effect on its monthly operating income?

- A. Operating income will increase by \$400,000.
- B. Operating income will increase by \$550,000.
- C. Operating income will decrease by \$200,000.
- D. Some other amount.

Unit SP	\$55
Unit VC	<u>15</u>
Unit CM	\$40
# units	<u>10,000</u>
	<u>\$400,000</u>

- C 3. What is the cause of the cost allocation death spiral?

- A. It is caused by accepting orders at a sales price that is less than the contribution margin per unit.
- B. It is caused when a company can buy its products for less than the cost to manufacture them.
- C. It is caused by not realizing that when a product line that appears to be unprofitable is dropped, the allocated fixed costs that had been allocated to the product cannot be avoided.
- D. It is caused by ignoring avoidable costs in a decision to drop a product line.

C

4. Fox Company purchased 50 acres of land for \$500,000 to develop a subdivision. Fox divided the land into two types of lots, waterfront and interior. Fox incurred \$100,000 in site clearing, and an additional \$70,000 for utility infrastructure for the property. Fox then divided the property into 8 waterfront lots and 32 interior lots. Fox plans to sell lots to homeowners. Each waterfront lot will sell for \$90,000, and each interior home will sell for \$40,000. Assume that Fox allocates the joint purchase and development costs of \$670,000 to the lots using the relative sales value method. What is the allocated cost of a single waterfront lot?

	# lots	SP	Value	Rel. Value	Common Cost	Alloc Cos
Water	8	X \$90,000	\$720,000	36%	X \$670,000	\$241,200
Int.	32	X \$40,000	1,280,000	64%		
	<u>40</u>		<u>2,000,000</u>	<u>100%</u>		<u>÷ 8</u>
				per lot		<u>\$30.150</u>

B

5. Forman, Inc. produces 3 different varieties of breakfast bars. Current production consists of 60,000 each of its nutty, fruity, and raisin breakfast bars. The full cost per unit of making each bar follows:

		AVOIDABLE
Direct materials	\$1.40	1.40
Direct labor	0.50	.50
Variable manufacturing overhead	0.20	.20
Allocated fixed overhead	<u>0.22</u>	<u>.074</u>
Full cost per unit	<u>\$2.32</u>	<u>2.144</u>

2.144 X 60,000 = \$128,640

An outside supplier has offered to sell Forman fruity breakfast bars for \$2.40 each and can supply all it needs. Forman has determined that 20% of the fixed overhead and all (100%) of the variable costs are avoidable if the company discontinues production of fruity breakfast bars. In addition, the company could lease the machine used to make the fruity bars to another company for \$4,000 annually. How much is the incremental effect on profit if Forman buys the fruity breakfast bars?

A. Decrease in profit of \$4,800.	Cost to buy - 60,000 X \$2.40 = (\$144,000)
B. Decrease in profit of \$11,360.	Avoidable Cost to make - benefit 128,640
C. Decrease in profit of \$19,360.	Opportunity cost of making that will reduce cost to buy 4,000
D. Decrease of profit of \$15,360.	Net incremental cost of buying <u>(11,360)</u>

A

6. Outdoor Sports is considering an offer from a customer who wants to buy 3,000 pairs of boots at \$28 a pair. The company normally sells 10,000 pairs of boots per month at \$34 a pair. Variable costs are \$18 per pair and fixed costs total to \$20,000. The company has excess capacity. What is the effect on income if the offer from the customer is accepted?

A. Increase of \$30,000.	Unit SP \$28
B. Increase of \$84,000.	Unit VC 18
C. Decrease of \$11,000.	Unit CM Spec Order <u>\$10</u>
D. Increase of \$9,000.	# pairs <u>X 3,000</u>
	<u>Increase in profit \$30,000</u>

- A 7. Cosmos sells 3 meals in its restaurants: Meat Lovers, Veggie Treats, and Chicken Fingers. Changes in product lines do not affect demand of other products. Results of April are below:

	Meat Lovers	Veggie Treats	Chicken Fingers	Total
Units sold	<u>8,000</u>	<u>5,000</u>	<u>6,000</u>	<u>19,000</u>
Sales	\$24,000	\$30,000	\$54,000	\$108,000
Variable Department costs	9,600	17,800	31,200	58,600
Direct fixed costs	<u>4,000</u>	<u>7,000</u>	<u>5,000</u>	<u>16,000</u>
Product line margin	10,400	5,200	17,800	33,400
Allocated fixed costs	4,800	<u>7,500</u>	<u>5,500</u>	<u>17,800</u>
Net income	<u>\$5,600</u>	<u>(\$2,300)</u>	<u>\$12,300</u>	<u>\$15,600</u>

How much is the incremental effect on profit if the company discontinues Veggie Treats?

- ☒ A. Decrease of \$5,200.
☐ B. Decrease of \$12,200.
☐ C. Decrease of \$10,400.
☐ D. Increase of \$2,300.

lost product line margin of \$5,200

- D 8. Rocky's Tools is using a full product cost-plus pricing strategy. Fixed costs are \$40,000, direct materials are \$20, direct labor is \$25, and variable overhead is \$15 per unit. The company estimates it will sell 5,000 socket sets. It desires a 30% markup on cost. How much is the selling price of each socket set?

- ☐ A. \$58.50
☐ B. \$68.00
☐ C. \$78.00
☒ D. \$88.40

$$\begin{aligned}
 SP &= \text{Cost} + 30\% \text{ Cost} \\
 SP &= \$68 + 30\% (68) \\
 &= \underline{\underline{\$88.40}}
 \end{aligned}$$

Full cost per unit

D. Mat'l	\$20
D. Labor	25
V. OH	15
F. OH - $\frac{\$40,000}{5,000}$	= 8
Full Cost per Unit	<u>\$68</u>

- B 9. When is it beneficial for companies to accept an order that is priced at less than the product's full cost?
- ☐ A. When the company is operating at capacity.
☒ B. When incremental revenue exceeds incremental cost.
☐ C. It is never beneficial to accept an order that is priced below full cost.
☐ D. It is always advantageous to have higher sales.

- A 10. Sebastian Lumber has determined the following costs related to customer sales and service:

Product costs	60% of sales price
Order processing	\$80.00 per order
Extra handling costs for next day shipment	\$32.00 per order
Telephone orders	\$30.00 per order
Sales management follow up costs	\$2,400 per customer per month

During May, the company tracked the following for its largest customer, Climax Builder:

Sales	\$44,000
Number of orders	12
Number of orders flagged as next day shipment	2
Number of telephone orders	3

$$\begin{aligned} & \times \$80 = \$960 \\ & \times \$32 = \$64 \\ & \times \$30 = \$90 \end{aligned}$$

How much is the dollar amount of profitability of the Climax Builder account in May?

- A A. \$14,086
B. \$16,486
C. \$17,600
D. \$41,600

$$\text{Profit} = \text{Sales} - \text{Cost of Sales} - \text{Indirect Expenses}$$

$$\text{Profit} = \$44,000 - (60\% \times \$44,000) - \$960 - \$64 - \$90 - \$2,400$$

$$\text{Profit} = \$14,086$$

- A 11. Seeking Sound, is designing a portable recording studio to be sold to consumers. The team developing the product includes representatives from marketing, engineering, and cost accounting. The recording studio set will include sound-canceling monitor headphones, audio recording and enhancement software, several instrumental and vocal microphones, and portable folding acoustic panels. With this set of features, the team believes that a price of \$6,500 will be attractive in the marketplace. Seeking Sound seeks to earn a per unit profit of 25 percent of selling price. How much is the target cost per unit?

- A A. \$4,875
B. \$1,625
C. \$5,200
D. Cannot be determined without additional information.

$$SP - \pi = \text{Cost}$$

$$\pi = 25\% SP$$

$$SP - 25\% SP = \text{Cost}$$

$$6500 - 1625 = \$4875$$

- C 12. Activity based pricing seeks to:

- A. Make greater profits by charging all customers more.
B. Maintain all customers in the customer base.
C C. Charge customers with the costs that they are creating.
D. Encourage companies to not discriminate in their pricing.

- B 13. A company estimates that ordering costs are \$2.00 per order, picking costs are \$1.00 per unique item ordered, packing costs are \$0.07 per item, and return costs are \$40.00 per return. A customer orders \$8,000 worth of goods with direct costs of \$6,200. The customer places 70 orders, orders 24 unique items, 940 total items, and makes 7 returns. What is the customer profit (loss)?

- A. \$509.80
 B. \$1,290.20
 C. \$7,490.20
 D. \$1,800

SP \$8,000
 D. Costs 6,200
 Order cost: 70 X \$2 140
 PICKING: 24 X \$1 24
 PACKING: 940 X .07 65.80
 Return: 7 X \$40 280.00
 Cust. profit \$1,290.20

- C 14. Green Company has a capacity of 60,000 units per year and is currently selling all 60,000 for \$500 each. General Company has approached Green about buying 5,000 units for only \$470 each. Green has a normal variable cost of \$420 per unit, including \$50 per unit in direct labor. Green could produce the special order on an overtime shift without affecting expected sales to its other customers. This would result in direct labor being paid overtime at 150% of the normal pay rate. Additionally, \$60,000 in additional fixed costs would be associated with the order. What will be the impact on profits of accepting the order?

- A. Profit will increase by \$125,000.
 B. Profit will increase by \$60,000.
 C. Profit will increase by \$65,000.
 D. Profit will increase by \$250,000.

Usual VC/unit \$420 Unit SP 470
 Less d labor/unit -50 Unit VC 440
 Var cost excl DL 370 em/unit 325
 150% V DL = \$50 X 1.5 = 75 #units X 5,000
 Incremental unit VC 445
 125,000
 Incremental FC -60,000
 Profit \$65,000

- D 15. Ortega Company produces three products, A, B, and C, from a single raw material. Budgeted data for next month follows:

	A	B	C
Units produced	3,000	4,500	6,000
Sales value at split-off (per unit)	\$15	\$18	\$24
Additional processing costs (per unit)	\$4	\$6	\$7
Joint production costs (per unit)	\$2	\$5	\$5
Sales value if processed further (per unit)	\$16	\$30	\$30

Unit Incremental Π or <loss> \$ <3> \$6 <\$1>
 The joint cost of the raw material is \$190,000. Which of the products should be produced beyond the split-off point?

- A. No Yes Yes
 B. Yes Yes Yes
 C. No No No
 D. No Yes No

Problem 1 (7 points)

Caiyue Industries is considering a special order from an overseas customer for 8,000 units at a price of \$38.00 per unit. Caiyue's product normally sells for \$50.00 per unit and has variable manufacturing costs of \$20.00 per unit and variable selling costs of \$3.00 per unit. Fixed manufacturing costs are \$500,000 and fixed selling and administrative costs are \$100,000. Caiyue has capacity to produce 100,000 units and is currently producing and selling only 80,000 units, which is the current demand for their product. If Caiyue accepts the order, Caiyue will incur legal and accounting fees of \$12,000 in connection with the order. Variable selling costs will not be incurred on the special order.

- What are the incremental revenues associated with the special order?
- What are the incremental costs associated with the special order?
- What amount of additional profit or loss will be incurred if the order is accepted? Clearly indicate whether there is additional profit or loss and the amount.

Problem 1 Answer:

0,1,2

a. $\$38.00 \times 8,000 = \$304,000$ +2

0,2

b. $\$20.00 \times \overset{8,000}{\cancel{100,000}} = \overset{160,000}{\cancel{\$2,000,000}}$ +2

0,2

Legal costs $\underline{12,000}$ +2

Incremental costs $\overset{\cancel{\$2,000,000}}{\underline{\underline{172,000}}}$

0,1

c. $\$304,000 - \cancel{\$2,000,000} = \cancel{\$1,696,000}$ profit +1 correct if based on their number in a.+ b.
 $\overset{304,000}{\cancel{3,040,000}} - 172,000 = \underline{\underline{132,000}}$

7

=

Problem 2 (12 points)

SM Press Company prints and binds books. The company is trying to decide whether to print the individual pages in-house (the current practice) or have a printing company perform this task. For each of the following items, state in the indicated space if it is "relevant" or "not relevant" to this decision.

R A. Cost of having the printing done by the printing company

R B. Quality of goods produced by the printing company

NR C. Salary of the accounting manager at SM Press Company

R D. Labor rate for printing department employees, assuming direct labor is variable.

NR E. Original price of the printing equipment owned by SM Press Company

NR F. Original price of the binding equipment owned by SM Press Company

2 pts each, 0,2

Problem 2 Answer

A.	Relevant	D.	Relevant
B.	Relevant	E.	Not Relevant
C.	Not relevant	F.	Not Relevant

Problem 3 (8 points)

Mitsubishi Corporation produces an executive jet for which it currently manufactures a fuel valve. The cost of the valve is indicated below:

Variable Costs		
Direct material	\$ 900	
Direct labor	500	
Variable overhead	300	
Total variable costs	<u>1,700</u>	\$1,700
Fixed Costs		
Depreciation of equipment	400	
Depreciation of building	100	
Supervisory salaries	500	
Total fixed costs	<u>1,000</u>	1,000
Total Cost		<u>\$2,700</u>

The company has an offer from Destin Valves to produce the part for \$1,590 per unit and supply 1,000 valves (the number needed in the coming year). If the company accepts this offer and shuts down production of valves, production workers will be terminated, but production supervisors will be reassigned to other areas needing their services. The equipment cannot be used elsewhere in the company, and it has no market value. However, another production group that is currently leasing space for \$64,000 per year can use the space occupied by the production of the valve.

Required:

Assume that the decision to make or buy the value is based solely on the financial impact. Prepare an incremental analysis to determine if the company should make or buy the valve. Show your computations and state your conclusion (make or buy) clearly.

Problem 3 Answer

Incremental cost to buy (1,000 × \$1,590)	(\$1,590,000)	+2	0,2	
Incremental cost savings (avoidable costs):				
Direct material (1,000 × \$900)	900,000	}	1,700,000	+2
Direct labor (1,000 × \$500)	500,000			
Variable overhead (1,000 × \$300)	300,000			
Leasing cost reduction	<u>64,000</u>		<u>1,764,000</u>	+2
Incremental benefit to buy			<u>\$ 174,000</u>	0, 1, 2
The company should buy the valve. +2 0,2				

1 pt if considered, but in wrong direction

If the student uses an alternative approach, give full credit if

- 1) they determine incremental benefit to buy is \$174,000, and
- 2) they conclude that it is preferable to buy the valve.

Bonus Question (2 points)

Who won the 2012 Daytona 500? Driver name or car number will be accepted.

Matt Kenseth #17
