

ACCT 102 Exam #4 - Chap 22 -24

Student: _____

True/False: Read the true/false questions very carefully. If the entire statement is true, then mark A on your Scan Tron form. If it is false, then mark B on your Scan Tron form.

1. All capital investment evaluation methods use the time value of money concept.
True False
2. If the internal rate of return (IRR) of an investment is below the hurdle rate, the project should be accepted.
True False
3. The time value of money concept works on the principle that a dollar today is worth more than a dollar tomorrow.
True False

Multiple Choice: Read each of the following questions and all the available choices. Then choose the ONE BEST choice and mark it clearly on your scan tron form:

4. An opportunity cost:
 - A. Is an unavoidable cost.
 - B. Requires a current outlay of cash.
 - C. Results from past managerial decisions.
 - D. Is the lost benefit of choosing an alternative course of action.
 - E. Is irrelevant in decision making.
5. The Mad Hatter Company owns a machine which manufactures two types of chimney caps. Production time is .20 hours for cap A and .40 hours for cap B. The machine's capacity is 2,000 hours per year. Both products are sold to a single customer who has agreed to buy all of the company's output up to a maximum of 1,000 units of cap A and 6,000 units of cap B. Selling prices and variable costs per unit are shown below. Based on this information, what is the Mad Hatter's most profitable sales mix?

	Cap A	Cap B
Selling price per unit	\$80	\$60
Variable costs per unit	53	42

- A. 10,000 units of cap A.
- B. 5,000 units of cap B.
- C. 1,000 units of cap A and 5,000 units of cap B.
- D. 1,000 units of cap A and 6,000 units of cap B.
- E. 1,000 units of cap A and 4,500 units of cap B.

6. To determine a product selling price based on the total cost method, management should include:
- A. Total production and nonproduction costs plus a markup.
 - B. Total production and nonproduction costs only.
 - C. Total production costs plus a markup.
 - D. Total nonproduction costs plus a markup.
 - E. Only a markup.

7. Alpha Co. can produce a unit of Beta for the following costs:

Direct material	\$ 8
Direct labor	24
Overhead	<u>40</u>
Total costs per unit	<u>\$72</u>

An outside supplier offers to provide Alpha with all the Beta units it needs at \$60 per unit. If Alpha buys from the supplier, Alpha will still incur 40% of its overhead. Alpha should:

- A. Buy Beta since the relevant cost to make it is \$72.
- B. Make Beta since the relevant cost to make it is \$56.
- C. Buy Beta since the relevant cost to make it is \$48.
- D. Make Beta since the relevant cost to make it is \$48.
- E. Buy Beta since the relevant cost to make it is \$56.

8. The net cash flow of a particular investment project:

- A. Does not take income taxes into consideration.
- B. Equals the total of the inflows of the project.
- C. Equals the total of the outflows of the project.
- D. Does not include depreciation.
- E. Is equal to operating income each period.

9. Expenses that are not easily associated with a specific department, and which are incurred for the benefit of more than one department, are:

- A. Fixed expenses.
- B. Indirect expenses.
- C. Direct expenses.
- D. Uncontrollable expenses.
- E. Variable expenses.

10. A unit of a business that not only incurs costs, but also generates revenues, is called a:

- A. Performance center.
- B. Profit center.
- C. Cost center.
- D. Responsibility center.
- E. Expense center.

11. Patrick Corporation inadvertently produced 10,000 defective personal radios. The radios cost \$8 each to produce. A salvage company will purchase the defective units as they are for \$3 each. Patrick's production manager reports that the defects can be corrected for \$5 per unit, enabling them to be sold at their regular market price of \$12.50. Patrick should:

- A. Sell the radios for \$3 per unit.
- B. Correct the defects and sell the radios at the regular price.
- C. Sell the radios as they are because repairing them will cause their total cost to exceed their selling price.
- D. Sell 5,000 radios to the salvage company and repair the remainder.
- E. Throw the radios away.

12. An expense that does not require allocation between departments is a(n):

- A. Common expense.
- B. Indirect expense.
- C. Direct expense.
- D. Administrative expense.
- E. All of these.

13. Which methods of evaluating a capital investment project ignore the time value of money?

- A. Net present value and accounting rate of return.
- B. Accounting rate of return and internal rate of return.
- C. Internal rate of return and payback period.
- D. Payback period and accounting rate of return.
- E. Net present value and payback period.

14. Marcus processes four different products that can either be sold as is or processed further. Listed below are sales and additional cost data:

Product	Sales Value with no further processing	Additional Processing Costs	Sales Value after further processing
Acta	\$1,350	\$900	\$2,700
Corda	450	225	630
Fando	900	450	1,800
Limo	90	45	180

Which product(s) should not be processed further?

- A. Acta.
- B. Corda.
- C. Fando.
- D. Limo.
- E. None of the products should be processed further.

15. A given project requires a \$30,000 investment and is expected to generate end-of-period annual cash inflows as follows:

Year 1	Year 2	Year 3	Total
\$12,000	\$8,000	\$10,000	\$30,000

Assuming a discount rate of 10%, what is the net present value of this investment? Selected present value factors for a single sum are shown in the table below.

i = 10% n = 1	i = 10% n = 2	i = 10% n = 3
.9091	.8264	.7513

- A. \$0.00.
- B. \$21,000.00.
- C. (\$7,461.00).
- D. \$39,930.00.
- E. (\$4,966.68).

16. The calculation of the payback period for an investment when net cash flow is even (equal) is:

- (A) $\frac{\text{Cost of investment}}{\text{Annual net cash flow}}$
- (B) $\frac{\text{Cost of investment}}{\text{Total net cash flow}}$
- (C) $\frac{\text{Annual net cash flow}}{\text{Cost of investment}}$
- (D) $\frac{\text{Total net cash flow}}{\text{Cost of investment}}$
- (E) $\frac{\text{Total Net Cash Flow}}{\text{Annual Net Cash Flow}}$

- A. A Above.
- B. B Above.
- C. C Above.
- D. D Above.
- E. E Above.

17. A disadvantage of using the payback period to compare investment alternatives is that:

- A. It ignores cash flows beyond the payback period.
- B. It includes the time value of money.
- C. It cannot be used when cash flows are not uniform.
- D. It cannot be used if a company records depreciation.
- E. It cannot be used to compare investments with different initial investments.

18. A company buys a machine for \$60,000 that has an expected life of 9 years and no salvage value. The company anticipates a yearly net income of \$2,850 after taxes of 30%, with the cash flows to be received evenly throughout of each year. What is the accounting rate of return?
- A. 2.85%.
 - B. 4.75%.
 - C. 6.65%.
 - D. 9.50%.
 - E. 42.75%.
19. An additional cost incurred only if a particular action is taken is a(n):
- A. Period cost.
 - B. Pocket cost.
 - C. Discount cost.
 - D. Incremental cost.
 - E. Sunk cost.
20. Capital budgeting decisions are risky because:
- A. The outcome is uncertain.
 - B. Large amounts of money are usually involved.
 - C. The investment involves a long-term commitment.
 - D. The decision could be difficult or impossible to reverse.
 - E. All of these are true
21. A company paid \$200,000 ten years ago for a specialized machine that has no salvage value and is being depreciated at the rate of \$10,000 per year. The company is considering using the machine in a new project that will have incremental revenues of \$28,000 per year and annual cash expenses of \$20,000. In analyzing the new project, the \$10,000 depreciation on the machine is an example of a(n):
- A. Incremental cost.
 - B. Opportunity cost.
 - C. Variable cost.
 - D. Sunk cost.
 - E. Out-of-pocket cost.
22. Which methods of evaluating a capital investment project use cash flows as a measurement basis?
- A. Net present value, accounting rate of return, and internal rate of return.
 - B. Internal rate of return, payback period, and accounting rate of return.
 - C. Accounting rate of return, net present value, and payback period.
 - D. Payback period, internal rate of return, and net present value.
 - E. Net present value, payback period, accounting rate of return, and internal rate of return.
23. A responsibility accounting performance report reports:
- A. Only actual costs.
 - B. Only budgeted costs.
 - C. Both actual costs and budgeted costs.
 - D. Only direct costs.
 - E. Only indirect costs.

Bridgestreet, Inc. has three operating departments: Cutting, Assembling and Finishing. Cutting has 5,000 employees and occupies 15,000 square feet. Assembling has 4,000 employees and occupies 12,000 square feet. Finishing has 1,000 employees and occupies 23,000 square feet. Indirect factory costs for the current period were Administrative, \$170,000 and Maintenance, \$212,000. Administrative costs are allocated to operating departments based on the number of workers and maintenance costs are allocated to operating departments based on square footage occupied.

24. Based on the above data, determine the maintenance cost allocated to each operating department of Bridgestreet, Inc.

- (A) Cutting: \$ 70,666 Assembling: \$ 70,666 Finishing: \$ 70,666
 (B) Cutting: \$ 15,000 Assembling: \$ 12,000 Finishing: \$ 23,000
 (C) Cutting: \$ 63,600 Assembling: \$ 50,880 Finishing: \$ 97,520
 (D) Cutting: \$127,333 Assembling: \$127,333 Finishing: \$127,333
 (E) Cutting: \$115,000 Assembling: \$ 91,680 Finishing: \$175,720

- A. Choice A
 B. Choice B
 C. Choice C
 D. Choice D
 E. Choice E

25. Based on the above data, determine the administrative cost allocated to each operating department of Bridgestreet, Inc.

- (A) Cutting: \$ 56,666 Assembling: \$ 56,666 Finishing: \$ 56,666
 (B) Cutting: \$ 5,000 Assembling: \$ 4,000 Finishing: \$ 1,000
 (C) Cutting: \$127,333 Assembling: \$127,333 Finishing: \$127,333
 (D) Cutting: \$ 85,000 Assembling: \$ 68,000 Finishing: \$ 17,000
 (E) Cutting: \$191,000 Assembling: \$152,800 Finishing: \$ 38,200

- A. Choice A
 B. Choice B
 C. Choice C
 D. Choice D
 E. Choice E

Jamesway Corporation has two separate divisions that operate as profit centers. The following information is available for the most recent year:

	<u>White Division</u>	<u>Grey Division</u>
Sales (net)	\$200,000	\$400,000
Salary expense	28,000	48,000
Cost of goods sold	100,000	159,000

The White Division occupies 20,000 square feet in the plant. The Grey Division occupies 30,000 square feet. Rent is an indirect expense and is allocated based on square footage. Rent expense for the year was \$50,000.

26. Grey Division's departmental income is:
- A. \$163,000.
 - B. \$211,000.
 - C. \$241,000.
 - D. \$ 52,000.
 - E. \$173,000.
27. Which of the following formulas correctly calculates the basic Return on Investment?
- A. $\text{Investment Center Net Income} / \text{Investment Center Average Invested Assets}$
 - B. $\text{Investment Center Average Invested Assets} / \text{Investment Center Net Income}$
 - C. $\text{Net income} / \text{Sales}$
 - D. $\text{Actual Investment Center Net Income} - \text{Target Investment Center Net Income}$
28. Which of the following formulas correctly calculates the residual income of an investment center?
- A. $\text{Investment Center Net Income} / \text{Investment Center Average Invested Assets}$
 - B. $\text{Investment Center Average Invested Assets} / \text{Investment Center Net Income}$
 - C. $\text{Net income} / \text{Sales}$
 - D. $\text{Actual Investment Center Net Income} - \text{Target Investment Center Net Income}$
29. The cost to accept a special one time order for a specific product at a discounted sales price best falls under the category of:
- A. Relevant Costing
 - B. Capital Budgeting
 - C. Flip a Coin
 - D. Long term strategic planning
30. Sales Mix issues deal with which of the following
- A. Maximizing the contribution margin
 - B. Production within constraints of the production environment
 - C. Production within the external constraints of customer willingness to purchase only a certain amount of product.
 - D. All of the above.

TURN YOUR SCAN TRON FACE DOWN!

PROBLEMS SECTION:

TURN YOUR SCAN TRON FACE DOWN BEFORE PROCEEDING. From the following problems, select **FOUR** problems. Prepare complete solutions, using proper format, and **SHOW THE DETAILS** for all calculations. If you do not do this, only partial credit will be earned.

31

Haver Company currently produces component RX5 for its sole product. The equipment that is used to produce RX5 must be replaced, and management must decide whether to replace the equipment or buy RX5 from an outside supplier. The current cost per unit to manufacture the required 50,000 units of RX5 follows.

Direct materials	\$ 5.00
Direct labor	8.00
Overhead	9.00
Total cost per unit	\$22.00

Direct materials and direct labor are 100% variable. Overhead is 80% fixed, and the current fixed overhead includes \$0.50 per unit depreciation on the old equipment. If management buys the new equipment, it will incur depreciation of \$1.12 per unit. An outside supplier has offered to supply the 50,000 units of RX5 for \$18.00 per unit.

Required

1. Determine whether the company should make or buy the RX5.
2. What factors beside cost must management consider when deciding whether to make or buy RX5?

32

Calla Company produces skateboards that sell for \$50 per unit. The company currently has the capacity to produce 90,000 skateboards per year, but is selling 80,000 skateboards per year. Annual costs for 80,000 skateboards follow.

Direct materials	\$ 800,000
Direct labor	640,000
Overhead	960,000
Selling expenses	560,000
Administrative expenses	480,000
Total costs and expenses	\$3,440,000

A new retail store has offered to buy 10,000 of its skateboards for \$45 per unit. The store is in a different market from Calla's regular customers and it would not affect regular sales. A study of its costs in anticipation of this additional business reveals the following:

- Direct materials and direct labor are 100% variable.
- Thirty percent of overhead is fixed at any production level from 80,000 units to 90,000 units; the remaining 70% of annual overhead costs are variable with respect to volume.
- Selling expenses are 60% variable with respect to number of units sold, and the other 40% of selling expenses are fixed.
- There will be an additional \$2 per unit selling expense for this order.
- Administrative expenses would increase by a \$1,000 fixed amount.

Required

1. Prepare a three-column comparative income statement that reports the following:
 - a. Annual income without the special order.

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Vortex Company operates a retail store with two departments. Information about those departments follows.

	Department A	Department B
Sales	\$800,000	\$450,000
Cost of goods sold	497,000	291,000
Direct expenses		
Salaries	125,000	88,000
Insurance	20,000	10,000
Utilities	24,000	14,000
Depreciation	21,000	12,000
Maintenance	7,000	5,000

The company also incurred the following indirect costs.

Salaries	\$36,000
Insurance	6,000
Depreciation	15,000
Office expenses	50,000

Indirect costs are allocated as follows: salaries on the basis of sales; insurance and depreciation on the basis of square footage; and office expenses on the basis of number of employees. Additional information about the departments follows.

Department	Square footage	Number of employees
A	28,000	75
B	12,000	50

Required

1. For each department, determine the departmental contribution to overhead and the departmental net income.
2. Should Department B be eliminated? Explain.

34 34

Virginia Company is able to produce two products, G and B, with the same machine in its factory. The following information is available.

	Product G	Product B
Selling price per unit	\$280	\$240
Variable costs per unit	130	60
Contribution margin per unit	<u>\$150</u>	<u>\$180</u>
Machine hours to produce 1 unit	0.2 hours	2.0 hours
Maximum unit sales per month	1,200 units	200 units

The company presently operates the machine for a single eight-hour shift for 22 working days each month. Management is thinking about operating the machine for two shifts, which will increase its productivity by another eight hours per day for 22 days per month. This change would require \$63,000 additional fixed costs per month.

Required

1. Determine the contribution margin per machine hour that each product generates.
2. How many units of Product G and Product B should the company produce if it continues to operate with only one shift? How much total contribution margin does this mix produce each month?
3. If the company adds another shift, how many units of Product G and Product B should it produce? How much total contribution margin would this mix produce each month? Should the company add the new shift? Explain.

35

Burtle Company is planning to add a new product to its line. To manufacture this product, the company needs to buy a new machine at a \$488,000 cost with an expected four-year life and a \$15,200 salvage value. All sales are for cash, and all costs are out of pocket except for depreciation on the new machine. Additional information includes the following.

Expected annual sales of new product	\$1,870,000
Expected annual costs of new product	
Direct materials	465,000
Direct labor	680,000
Overhead excluding straight-line depreciation on new machine	335,000
Selling and administrative expenses	158,000
Income taxes	40%

Required

1. Compute straight-line depreciation for each year of this new machine's life. (Round depreciation amounts to the nearest dollar.)
2. Determine expected net income and net cash flow for each year of this machine's life. (Round answers to the nearest dollar.)
3. Compute this machine's payback period, assuming that cash flows occur evenly throughout each year. (Round the payback period to two decimals.)
4. Compute this machine's accounting rate of return, assuming that income is earned evenly throughout each year. (Round the percentage return to two decimals.)
5. Compute the net present value for this machine using a discount rate of 8% and assuming that cash flows occur at each year-end. (Hint: Salvage value is a cash inflow at the end of the asset's life. Round the net present value to the nearest dollar.)

36 You must prepare a return on investment for the regional manager of Veggie Burgers. The Veggie Burger locations are treated as investment centers. This growing chain is trying to decide which outlet of two alternatives to open. The first location (A) requires a \$550,000 investment and is expected to yield annual net income of \$87,000. The second location (B) requires a \$200,000 investment and is expected to yield annual net income of \$41,000. Compute the return on investment for each Veggie Burger alternative, compute the residual income, and then make a recommendation in a paragraph supporting your answer.

Required: (1) Compute the return on investment using the basic ROI formula for each location.

(2) If the company has a minimum desired rate of return of 10%, how much is residual income for each location?

(3) Make a recommendation as described above.