REVIEW FOR EXAM NO. 4, ACCT-2302 (SAC)
(Chapters 23-24)

A. Chapter 23 (Relevant Costing for Managerial Decisions).

1. Relevant Costs. (Page 903)
   a. Costs that are applicable to a particular decision.
   b. Costs that should have a bearing on which alternative a manager selects.
   c. Costs that are avoidable.
   d. Future costs that differ between alternatives.

2. Keys to Analysis.
   a. Focus on relevant revenues, costs, and profits.
   b. Require an investment rate of return greater than the organization's current required rate of return.

3. Special Offers. (Page 912)
   a. Decisions made based on incremental costs and incremental revenues.

   b. Example: A Company manufactures electric drills. It's product sells for $100. The company produces and sells 5,000 of them per year. Cost data are as follows:

   Variable manufacturing..... $65 per unit
   Variable marketing..... $ 5 per unit
   Fixed manufacturing..... $270,000 per year
   Fixed marketing & admin..... $140,000 per year

   An offer has come in for a one-time sale of 100 units at a special price of $80 per unit. No variable or fixed costs are affected and there is production capacity. The effect of this deal on operating income is:

Special sale price per unit.....$ 80	Incremental unit revenue.....$15
Variable cost per unit..... (65)	Special offer units..... x 100
Incremental revenue.....$ 15	Increase in income..... $1,500

4. Make or Buy Decisions. (Page 904)

   a. In-house product cost includes direct material, direct labor, and variable overhead. (Predetermined fixed overhead rate is not used.)

   b. Out-source only if the in-house cost is greater than the offered supplier cost.

c. Out-Source Example:

Variable Cost:	**Make**	**Out-Source**
Direct materials	$9.00	
Direct Labor	2.00	
Variable manufacturing overhead	4.00	
Purchase Units		$12.00
Totals	$15.00	$12.00

(Decision.....Out-source)

5. Sell or Process Further. (Page 905)

a. As a general rule, process further only if incremental revenues exceed incremental costs.
b. Ignore joint costs (cost to produce basic product).
c. Sell or Process Further Example:

Letterman Corp. produces Product A which is can sell as, or process further into Product B.
(1) Revenue from Product A.....$ 1,350
(2) Revenue from Product B.....$ 2,700
(3) Additional cost for processing further.....$ 900

Incremental Revenue:	Product B revenue	$ 2,700
	Product A revenue	(1,350)
	Incremental revenue	$ 1,350
Incremental Cost:	Further processing Product B	(900)
	Net increase in income	$ 450

(Decision.....process further)

6. Product Mix. (Page 906)

a. Determine if any constraints exist to limit production and sale of all products.

b. Produce products that provide the highest contribution margin per unit of the constraint.

Example:	**Product A**	**Product B**
Sales price	$500	$570
Variable cost	(300)	(350)
Contribution margin	$200	$220
Bottleneck hours	÷ 8	÷ 10
Bottleneck contribution margin	$ 25	$ 22

c. Contribution Margin approach assists in the decision process because it separates costs by behavior (variable vs fixed).

7. Dropping Products and Segments. (Page 908)

   a. A candidate for elimination only if revenues are less than avoidable expenses.

   b. Drop if avoidable fixed costs are greater than its contribution margin.

   c. Ignore unavoidable fixed costs.

   d. Effect on net income:
      (1) Decreases net income if contribution margin is positive.
      (2) Increases net income if contribution margin is negative.

B. Chapter 24 (Capital Budgeting & Investment Analysis).

1. Relevant Costs.

   a. Future costs that differ between the alternatives.

   b. In analysis, use only relevant costs, not total costs or complete income statement approach.
      (1) Differential Revenue - additional revenue generated if an alternate action is taken.
      (2) Incremental Cost - additional cost incurred if a specific action is taken.

   c. Opportunity Costs - Economic benefit "*forgone*" as a result of pursuing a particular course of action (alternative).

   d. Sunk Costs - A cost that arises from a past decision and cannot be avoided or changed, and is always irrelevant.

   e. Out-of-Pocket Cost - Future outlay of cash for a given investment.

   f. Incremental Cost - An additional cost incurred if a particular action is taken.

2. Capital Budgeting / Analysis. (Page 933)

   a. Process by which management plans, evaluates, and controls long-term investment decisions.

3. Capital Budgeting Methods/Indicators.

   a. Methods that do not use Present Value. (Page 933)
      (1) Payback
      (2) Accounting Rate of Return

   b. Methods that use Present Value. (Page 937)
      (1) Net Present Value
      (2) Internal Rate of Return

4. Payback Period. (Page 933)

   a. Length of time it takes to recover original investment, in terms of annual net cash flows.

   b. Net cash flow is excess of revenue cash inflows over cash outflows, for expenses directly related to an investment alternative.

   c. Types of Net Cash Flows:
      (1) Even Cash Flow formula:

$$\frac{\text{Total Investment}}{\text{Annual Net Cash Flow}} = \text{Payback Period}$$

      (2) Uneven Cash Flow
      Accumulate uneven cash flows until the investment amount is reached (recovered).

   d. Disadvantage - This management tool ignores cash flows beyond the payback period.

5. Accounting Rate of Return. (Page 936)

   a. Measures the average return over the life of an asset.

   b. Formula:

$$\text{ARR} = \frac{\text{Average Annual Operating Income}}{\text{Average Amount Invested}}$$

6. Net Present Value. (Page 937)

a. The (NPV) method computes the expected net monetary gain or loss from a project.

b. Discounts the expected cash flows to the present.

c. Formula: NPV = (Present value of cash flows) - (Investment cost)

d. A project with a positive NPV is an acceptable investment opportunity.

e. NPV Example:

Present value of annuity of $1:

Period	8%	9%	10%
1	0.926	0.917	0.909
2	1.783	1.759	1.736
3	2.577	2.531	2.487
4	3.312	3.240	3.170
5	3.993	3.890	3.791

A company is considering an investment of $60,000 in a project that will yield cash flows of $20,000 for 4 years. The company uses a discount rate of 9%. What is the net present value of the investment?

Years		Net Cash Inflow	Annuity Factor	Present Value
1 - 4	Present value of annuity.....	$20,000	3.240	$ 64,800
0	Initial investment.....			(60,000)
	Net present value.....			$ 4,800