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| *ACC 3123 REVIEW FOR FINAL* |
| *CHAPTER* | *TOPIC* | *PRACTICE**QUESTIONS* |
| CHAPTER 7:VARIANCE ANALYSIS*5 QUESTIONS* | * M.Price.V
* M.Quantity.V
* L.Rate.V
* L.Efficiency.V
* Controllable.OH.V
* OH.Volume.V
 | **14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 32, 44, 46** |
| CHAPTER 8:BUDGETING*5 QUESTIONS* | * SALES BUDGET
* PRODUCTION BUDGT
* MATERIAL BUDGT
* LABOR BUDGT
* OH BUDGET
* BUDGETED I/S
* CASH FLOW BUDGET
 | **19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 35, 36** |
| CHAPTER 15:CAPITAL BUDGETING*5 QUESTIONS* | * NPV
* IRR
* EPVI (PROF INDEX)
* PAYBACK PERIOD
* ACCT ROR
* DEPRECIATION TAX SHIELD
 | **21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 35, 45, 46, 47, 48** |
| *TOTAL = 15 QUESTIONS* |  |

ALSO GO THROUGH SAMPLE EXAM + ALL EXCEL PROBLEMS

ADDITIONAL PRACTICE QUESTIONS

**1.** Slyman Manufacturing Inc. has developed the following standards for one of its products. The materials are not substitutable.

|  |  |  |  |
| --- | --- | --- | --- |
| Material 1 | 5 yards | $6/yard | $ 30 |
| Material 2 | 6 pieces | $5/piece | $ 30 |
| Direct labor | 3 hours | $24/hour | $ 72 |
| Total variable cost per unit |  |  | $132 |

The records for March showed the following actual results:

|  |  |  |
| --- | --- | --- |
| Material 1 | Purchased | 10,000 yards for $58,000 |
|  |  Used |  9,500 yards |
| Material 2 | Purchased | 15,000 pieces for $78,750 |
|  |  Used | 12,100 pieces |
| Direct labor |  |  5,900 hours for $147,500 |
| Units produced |  | 2,000 units |

**Required:**

(1.) Calculate the following variances

(a.) Material purchase price variance for material 1

(b.) Material quantity variance for material 1

(c.) Material purchase price variance for material 2

(d.) Material quantity variance for material 2

(e.) Labor rate variance

(f.) Labor efficiency variance

Answer:

(1.)

(a.) $2,000 favorable $58,000-10,000($6) = $58,000-$60,000

(b.) $3,000 favorable $6(9,500-5(2,000)) = $6(9,500-10,000)

(c.) $3,750 unfavorable $78,750 - $5(15,000) = $78,750-$75,000

(d.) $ 500 unfavorable $5(12,100-6(2000)) = $5(12,100-12,000)

(e.) $5,900 unfavorable $147,500 - $24(5,900) = $147,500 - $141,600

(f.) $2,400 favorable $24(5,900-3(2,000)) = $24(5,900-6000)

**2.** Esther Industries developed the following standards for one of its products:

|  |  |  |  |
| --- | --- | --- | --- |
| Material |  6 feet | $15/foot | $ 90 |
| Labor | 10 hours | $12/hour |  120 |
|  Total variable cost |  |  | $210 |

Actual results for September were:

|  |  |
| --- | --- |
| Units produced | 13,000 |
| Material purchased | 40,000 feet for $14.25/foot |
| Material used | 80,000 feet |
| Direct Labor | 127,500 hours at $12.25/hour |

Required:

(1.) Calculate the following variances

(a.) Material purchase price variance

(b.) Material quantity variance

(c.) Labor rate variance

(d.) Labor efficiency variance

Answer:

(1.)

(a.) $30,000 favorable 40,000($14.25-$15.00) = 40,000($0.75)

(b.) $30,000 unfavorable $15(80,000-6(13,000)) = $15(80,000-78,000)

(c.) $31,875 unfavorable 127,500($12.25-$12.00) = 127,500($0.25)

(d.) $30,000 favorable $12(127,500-10(13,000)) = $12(127,500-130,000)

**3.** O'Harrigan Company manufactures a single product. The following standards have been developed for it:

|  |  |  |
| --- | --- | --- |
| Direct material | 5 pounds | $4/pound |
| Direct labor  | 2 hours | $9/hour |

During May, the following actual activities occurred: Material purchased, 6,000 pounds for $44,000; material used in the production of 2,000 units of product, 10,400 pounds; direct labor, 3,000 hours costing $30,000.

Required:

(1.) Compute the following variances:

(a.) material quantity variance

(b.) labor rate variance

(c.) labor efficiency variance

Answer:

(1.)

(a.) $1,600 unfavorable $4(10,400-10,000) = $4(400)

(b.) $3,000 unfavorable $30,000-$9(3,000) = $30,000-$27,000

(c.) $9,000 favorable $9(3,000-2(2,000)) = $9(3,000-4,000) = $9(1,000)

**4.** Prefetto Company is in the process of preparing its cash budget for the year. The sales forecast for the last six months of the year follows:

|  |  |
| --- | --- |
| **Month** | **Sales** |
| July | $100,000 |
| August | 80,000 |
| September | 90,000 |
| October | 120,000 |
| November | 150,000 |
| December | 200,000 |

The historical analysis of payment patterns of their customers has provided the following percentages:

60 percent in month of sale

25 percent in month after sale

10 percent in second month after sale

 5 uncollectible

Payments made in the month of sale receive a 2 percent discount.

Required: Prepare a detailed cash collections from sales schedule for October, November, and December.

Answer:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **October** | **November** | **December** |
| August | $ 8,000 |  |  |
| September |  22,500 | $ 9,000 |  |
| October |  72,000 |  30,000 | $ 12,000 |
| November |  |  90,000 |  37,500 |
| December | \_\_\_\_\_\_\_ | \_\_\_\_\_\_\_ |  120,000 |
|  | $102,500 | $129,000 | $169,500 |
|  |  |  |  |

**5.** Moore Inc. manufactures a product that uses three different materials in the following amounts: 4 pounds of material A per unit at $1.00 per pound; 2 pints of material B per unit at $.50 per pint; and 1 container at $10 per container. The company has 1,500 pounds of A, 1,200 pints of B and 500 containers on hand September 30 and wants an ending inventory equal to 120 percent of beginning inventory. The company expects to sell 2,000 containers of this product in October. Purchases of material are paid for in the month of purchase.

**Required:** How much materials have to be purchased in November and at what cost?

Answer:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Material A** | **Material B** | **Container** |
| Sales in units | 2,000 | 2,000 | 2,000 |
| Material/unit | x 4 | x 2 | x 1 |
| Production needs  | 8,000 | 4,000 | 2,000 |
| Desired end inventory | 1,800 | 1,440 | 600 |
| Total needs | 9,800 | 5,440 | 2,600 |
| Beginning inventory | 1,500 | 1,200 | 500 |
| Purchases needed | 8,300 | 4,240 | 2,100 |
| Cost per unit | x $1 | X $.50 | x $10 |
| Purchase cost | $8,300 | $2,120 | $21,000 |

**6.** Yoni Corporation manufactures skateboards and is in the process of preparing next year's budget. The pro forma income statement for the current year is presented below:

|  |  |  |
| --- | --- | --- |
| Sales (50,000 units) |  | $1,500,000 |
| Cost of sales: |  |  |
|  Direct materials | $250,000 |  |
|  Direct labor |  150,000 |  |
|  Variable overhead |  75,000 |  |
|  Fixed overhead |  100,000 |  575,000 |
| Gross profit |  |  925,000 |
| Selling G & A |  |  |
|  Variable |  200,000 |  |
|  Fixed |  250,000 |  450,000 |
| Operating income |  | $ 475,000 |

Compute the following:

(1.) What is contribution margin per unit? \_\_\_\_\_\_\_\_\_\_

(2.) What is the breakeven point in units? \_\_\_\_\_\_\_\_\_\_

(3.) Assume that for the coming year, the management of Yoni anticipates a 10 percent increase in the sales price, a 12 percent increase in variable costs, and a $45,000 increase in fixed expenses. What would be the breakeven point in units for the coming year? \_\_\_\_\_

Answer:

(1.) $30 - $5.00 - $3.00 - $1.50 - $4.00 = $16.50.

(2.) $350,000 / $16.50 = 21,212 units (rounded)

(3.) $395,000 / $17.88 = 22,092 units (rounded)

**7.** Bachman Corp. produces three products. Data concerning the selling prices and unit costs of the three products appear below:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **C** |
| Selling price | $40 | $50 | $90 |
| Variable costs |  30 |  40 |  60 |
| Machine time | 4 min. | 5 min. | 10 min. |

The fixed costs incurred in the factory are $100,000 per year. Demand for the three products exceed the company's productive capacity. The machine time is the constraint, with only 3,000 minutes of machine time available this week.

**Required:**

(1.) Given the machine time constraint, which product would be emphasized?

(2.) Assuming that there is still unfilled demand for the product that the company should emphasize in part (1) above, up to how much should the company be willing to pay for an additional hour of machine time?

Answer:

(1.)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **C** |
| Selling price | $40 | $50 | $90 |
| Variable costs |  30 |  40 |  60 |
| Contribution margin per unit |  10 |  10 |  30 |
| Machine time | 4 min. | 5 min. | 10 min. |
| Contribution margin per minute | $2.50 | $2.00 | $3.00 |

Product C should be emphasized because it has the greatest contribution margin per unit of scarce resource.

(2.) If additional machine time would be used to produce more of Product C, the time would be worth 60 minutes per hour X $3.00 per minute = $180 per hour.

**8.** Chisel Inc currently produces 25,000 hammers per year with variable costs of $75,000 and fixed costs of $30,000 per year. The hammers sell for $5 per unit. Currently, the company has no excess capacity as it is able to sell all of the hammers it produces. John Maccabi, head salesman received a special order for an additional 5,000 units at the same price. Producing the extra units will require the company to rent and additional machine for increased capacity. The cost of the increased machine is $12,500. Should the company accept the special order – explain your answer

Difficulty: Medium Learning Objective: 4

Answer:

|  |  |  |  |
| --- | --- | --- | --- |
| Units |  30,000  |  25,000  |  |
| Price per Unit |  $ 5  |  $ 5  |  |
| VC per Unit |  $ 3  |  $ 3  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|   | With Special Order | Status Quo | Difference |
| Sales Revenue |  $ 150,000  |  $ 125,000  |  $ 25,000  |
| VC in total |  $ (90,000) |  $ (75,000) |  $ (15,000) |
| Contribution Margin |  $ 60,000  |  $ 50,000  |  $ 10,000  |
| Fixed Cost Changes |   |   |  $ -  |
| Machine Rental |  $ (12,500) |  $ -  |  $ (12,500) |
| Operating Profit |  $ 47,500  |  $ 50,000  |  $ (2,500) |

Based upon the change in operating profit, the company should not accept the special order.

**9.** Sanders Company needs 10,000 units of a certain part to use in its production cycle. If Sanders buys the part from Rodman Company instead of making it, Sanders cannot use the excess capacity for another manufacturing activity. Forty percent of the overhead will continue regardless of what decision is made.

Cost to Sanders to make the part (per unit)

|  |  |
| --- | --- |
| Direct materials  | $20 |
| Direct labor  |  32 |
| Fixed Overhead  |  15 |

Cost to buy the part from Rodman - $65 (per unit)

Required:

(1.) In deciding whether to make or buy the part, what are Sanders' total relevant costs to make the part? \_\_\_\_\_\_\_\_\_\_

(2.) What decision should Sanders make, and what is the total cost advantage that would result?

 \_\_\_\_\_\_\_\_\_\_

(3.) What is the total dollar value of costs that are not relevant to this decision? \_\_\_\_\_

Answer:

(1.) $20 + 32 + 9 ($15 x 60%) = $61 x 10,000 = $610,000.

(2.) Relevant costs to make - $610,000.

 Relevant costs to purchase - $650,000.

 There is a $40,000 advantage to making the part.

(3.) The fixed overhead that will continue regardless of what decision is made is not relevant to the decision - ($15 x 40%) x 10,000 units = $60,000.

**10.** Jones Corp. currently sells 30,000 units to its normal customers, but it has a capacity to produce 40,000 units. Its product sells for $50 per unit and the variable costs incurred in manufacturing and selling the product are as follows on a per unit basis: Direct materials - $15; Direct labor - $20; Sales commission - $3. A customer has proposed a special order to purchase 10,000 units at a special price of $45 per unit. If Jones accepts the order, the company would not have to pay its sales people their normal commission of $3 per unit, but the company would incur a shipping cost of $5 per unit.

**Required:**

(1.) If Jones accepts the special order, how would operating income be affected? \_\_\_\_\_\_\_\_\_\_

(2.) What is the minimum price per unit below which Jones should reject the order? \_\_\_\_\_\_\_\_\_\_

(3.) Assume that Jones is operating at full capacity. What is the minimum price per unit below which Jones should reject the order? \_\_\_\_\_

Answer:

(1.) $45 - 15 - 20 - 5 = $5 per unit x 10,000 = $50,000. Operating income would increase by $50,000.

(2.) When operating at below capacity, the minimum price that Jones would accept would be their incremental costs of direct materials, direct labor and the shipping cost = $15 + 20 + 5 = $40.

(3.) When operating at full capacity, Jones would not sell to the customer unless they also made the same profit per unit as on the regular order. Profit per unit on the regular order = $50 - 15 - 20 - 3 = $12 per unit. The minimum price would be their incremental costs on the special order of $40 per unit plus $12 per unit profit = $52 per unit.

**11**. Brewer Corp. is considering dropping its talking dog product line due to continuing losses.

Revenue and cost data for the talking dog line for the past year follow:

|  |  |
| --- | --- |
| Sales (20,000 units) | $300,000 |
| Variable costs |  180,000 |
| Contribution margin |  120,000 |
| Fixed costs |  140,000 |

If the talking dog is discontinued, then Brewer could avoid $110,000 per year in fixed costs.

**Required:**

(1.) What is the change in annual operating income from discontinuing the talking dog product line?

 \_\_\_\_\_\_\_\_\_\_\_

(2.) Assuming all other conditions stay the same, at what level of annual sales of the talking dog (in units) should Brewer be indifferent at to discontinuing or continuing the product line?

\_\_\_\_\_\_\_\_\_\_\_

(3.) Suppose that if the talking dog is dropped, the production and sale of other products would increase so as to generate a $15,000 increase in the contribution margin received from the other products. If all other conditions are the same, what is the change in annual operating income from dropping the talking dog? \_\_\_\_\_

Answer:

(1.) An overall decrease of $10,000 per year. Currently, the talking dog has a net loss of $20,000, but $30,000 of fixed costs would continue regardless of what decision is made. The $30,000 would be allocated to other products.

(2.) The annual level of sales where Brewer would be indifferent is that where the avoidable fixed costs are equal to the contribution margin. $110,000 / $6 (contribution margin per unit) = 18,333 (rounded). At 18,333 units, Brewer would be indifferent as to keeping or dropping the talking dog.

(3.) Brewer would lose $10,000 per year from dropping the talking dog product line, but gain $15,000 from the new product line. Overall, income would increase by $5,000.

**12.** Nolde Oil Company owns the drilling rights to several oil wells. The amount of oil in some of the wells is somewhat marginal, and the company is unsure whether it would be profitable to drill the oil that is contained in these wells. One such oil well is number 55, on which the following is gathered:

|  |  |
| --- | --- |
| Investment in equipment needed for extraction work | $280,000 |
| Working capital investment required |  60,000 |
| Annual cash receipts (before taxes) |  85,000 |
| Cost of restoring land at completion of work |  30,000 |

The oil in well number 55 would be fully drilled after seven years of work. The equipment will have no value at the end of this time and will be scrapped. Nolde uses straight-line depreciation for tax purposes. The tax rate is 40% and Nolde uses a 10% discount rate in investment proposals. The working capital would be released for other uses at the end of the seven years.

Required:

(1) Compute the net present value of Well Number 55.

(2) What should management's decision be?

Answer:

(1) Straight-line depreciation is $40,000 per year ($280,000 / 7). Before tax income per year is $45,000 ($85,000 - 40,000). Income taxes per year are $18,000 ($45,000 x 40%). The after-tax cash flow per year is $85,000 - $18,000 = $67,000. The net present value is as follows:-$280,000 - $60,000 + ($67,000 x 4.868) + ($60,000 x .513) – ($30,000 x .513) = 1,546.

(2) Since the net present value is positive, Nolde should drill oil well number 55.

**13**. Horwitz Company has $20,000 to invest. The company is trying to decide between two alternative projects to invest in, which are as follows:

|  |  |  |
| --- | --- | --- |
|  | **Project 1** | **Project 2** |
| Investment required | $20,000 | $20,000 |
| Annual cash inflows |  5 ,000 |  -0- |
| Single cash flow at the end of eight years |  -0- |  70,000 |
| Life of the project |  8 years |  8 years |

The cost of capital for Horwitz is 12 percent. Which project should Horwitz invest in?

Answer:

The net present value for Project 1 is as follows: -$20,000 + (5,000 x 4.968) = $4,840.

The net present value for Project 2 is as follows: - $20,000 + (70,000 x .404) = $8,280.

Either project would be acceptable to invest in since they both have positive net present values; however, since Horwitz only has the funds to invest in one of the projects, they should choose Project 2, which has a higher net present value.

**14**. Albrecht Corp. has contracted with Cammack Contractors to build a new building. The building is scheduled for completion in two years. Cammack has given Albrecht one of three payment options:

Option #1 - Pay $2,000,000 immediately.

Option #2 - Pay $1,100,000 at the end of each year for the next two years.

Option #3 - Pay $2,500,000 at the end of the two year period.

Assume that both Cammack and Albrecht use a 10% discount rate in making investment decisions.

**Required:**

(1.) Which investment option should Albrecht choose?

(2.) What payment option would Cammack like for Albrecht to choose?

Answer:

The following is the present value of the three payment options:

Option #1 - $2,000,000.

Option #2 - $1,100,000 x 1.736 = $1,909,600.

Option #3 - $2,500,000 x .826 = $2,065,000.

(1.) Albrecht should choose Option #2, since it has the lowest net present value.

(2.) Cammack would like Albrecht to choose Option #3, since it has the highest net present value.

**15.** The Bobcats Football Team has installed a new electronic scoreboard at its football stadium at a cost of $100,000. The scoreboard has an estimated 10-year life and a salvage value of $8,000. Using straight-line depreciation, determine the present value of its tax savings from the depreciation tax shield. Assume an income tax rate of 40% and a discount rate of 10%.

Difficulty: Easy Learning Objective: 8

Answer:

Depreciation per year = ($100,000 - $8,000) / 10 = $9,200.

Tax savings per year = ($9,200 x 40%) = $3,680.

Present value of tax shield = ($3,680 x 6.145) = $22,614.