B.Sc. Engg. SWE 2nd Semester 18 May, 2023

# ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
## ORGANISATION OF ISLAMIC COOPERATION (OIC)
## Department of Business and Technology Management (BTM)

**FINAL EXAMINATION** **SUMMER SEMESTER, 2021-2022**

**DURATION: 3 Hours** **FULL MARKS: 150**

# HUM 4247: Accounting

**Programmable calculators are not allowed. Do not write anything on the question paper.**

Answer all **6 (six)** questions. Marks of each question and corresponding CO and PO are written in the right margin with brackets.

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1. a) Using the following data from the comparative balance sheet of HP Company, prepare a schedule showing the **Horizontal Analysis**. 5 (CO2) (PO2)

| | December 31, 2018 | December 31, 2017 |
|---|---|---|
| Accounts receivable | $ 520,000 | $ 400,000 |
| Inventory | 840,000 | 600,000 |
| Total assets | 3,000,000 | 2,500,000 |

b) Apple Corporation's comparative balance sheets are presented below: 20 (CO3) (PO4)

| APPLE CORPORATION<br>**Balance Sheets**<br>December 31 | | |
|---|---|---|
| | **2018** | **2017** |
| Cash | $ 4300 | $ 3700 |
| Accounts receivable | 21200 | 23400 |
| Inventory | 10000 | 7000 |
| Land | 20000 | 26000 |
| Building | 70000 | 70000 |
| Accumulated depreciation | (15000) | (10000) |
| **Total** | **$110500** | **$120100** |
| Accounts payable | $ 12370 | $ 31100 |
| Common stock | 75000 | 69000 |
| Retained earnings | 23130 | 20000 |
| **Total** | **$110500** | **$120100** |

Apple's 2018 **income statement** included Net Sales of $100,000, Cost of Goods Sold of $60,000, Cash Dividends $20,000 and Net Income of $15,000.

**Required:**

Compute the following ratios for **2018**.

**i)** Current ratio.
**ii)** Acid-test ratio.
**iii)** Receivables Turnover.
**iv)** Inventory turnover.

v) Profit margin.
vi) Asset turnover.
vii) Return on assets.
viii) Return on common stockholder's equity.
ix) Debt to total assets ratio.
x) Payout Ratio.

2. a) "Efforts should be matched with accomplishments"-this statement indicates a principle of accounting. Explain the statement. 6 (CO1) (PO1)

b) An inexperienced bookkeeper prepared the following trial balance. Prepare a **correct trial balance**, assuming all account balances are normal. 10 (CO2) (PO2)

JOHN COMPANY
Trial Balance
December 31, 2018

| Accounts Title | Debit | Credit |
|---|---|---|
| Cash | $14,800 | |
| Prepaid Insurance | | $3,500 |
| Accounts Payable | | 3,000 |
| Unearned Revenue | 2,200 | |
| P. John, Capital | | 13,000 |
| P. John, Drawing | | 4,500 |
| Service Revenue | | 25,600 |
| Salaries Expense | 18,600 | |
| Rent Expense | | 2,400 |
| | **$35,600** | **$52,000** |

43800

c) Ratul Ahmed is a licensed CPA. During the first month of operations of her business, the following events and transactions occurred. 9 (CO2) (PO2)

**May 1:** Ratul invested $25,000 cash in her business.
**May 2:** Hired a secretary-receptionist at a salary of $2,000 per month.
**May 3:** Purchased $2,500 of supplies on account from Barry Supply Company.
**May 7:** Paid office rent of $900 cash for the month.
**May11:** Completed a tax assignment and billed client $2,100 for services provided.
**May 12:** Received $3,500 advance on a management consulting engagement.
**May 17:** Received cash of $1,200 for services completed for Max Company.
**May 31:** Paid secretary-receptionist $2,000 salary for the month.
**May 31:** Paid 40% of balance due Barry Supply Company.

Ratul uses the following chart of accounts: No. 101 Cash, No. 112 Accounts Receivable, No. 126 Supplies, No. 201 Accounts Payable, No. 205 Unearned Revenue, No. 301 Ratul Ahmed, Capital; No. 400 Service Revenue, No. 726 Salaries Expense, and No. 729 Rent Expense.

**Required:**

Journalize the transactions.

3. a) Supreme Company reports the following costs and expenses in May. 10 (CO2) (PO2)

| | | | |
|---|---|---|---|
| f | Factory utilities | $15,500 | |
| f | Depreciation on factory equipment | 12,650 | |
| | Depreciation on delivery trucks | 3,800 | o |
| f | Indirect factory labor | 48,900 | |
| f | Indirect materials | 80,800 | |
| p | Direct materials used | 137,600 | |
| f | Factory manager's salary | 8,000 | |
| p | Direct labor | 69,100 | |
| | Sales salaries | 46,400 | o |
| f | Property taxes on factory building | 2,500 | |
| | Repairs to office equipment | 1,300 | o |
| f | Factory repairs | 2,000 | |
| | Advertising | 15,000 | o |
| | Office supplies used | 2,640 | o |

**Required:**

From the information, determine the total amount of:

(i) Factory overhead.

(ii) Product costs.

(iii) Period costs.

b) 15 (CO3) (PO4)

| | |
|---|---|
| Opening stock of raw material | $12,500 |
| Purchases of raw material | 1,36,000 |
| Closing stock of raw material | 8,500 |
| Direct wages | 54,000 |
| Direct expenses | 12,000 |
| Factory overheads | 100% of direct wages |
| Office and administrative overheads | 20% of works cost |
| Selling and distribution overheads | 26,000 |
| Cost of opening stock of finished goods | 12,000 |
| Cost of Closing stock of finished goods | 15,000 |
| Profit on Selling Price | 20% |

**Required:**

From the above information, prepare a Cost Sheet for the period ended on 31st March, 2018.

4. a) What are the assumptions of CVP Analysis? 5 (CO1) (PO1)

b) Max Company manufactures and sells a specialized cordless telephone for high electromagnetic radiation environments. The company's contribution format income statement for the most recent year is given below: 20 (CO2) (PO2)

| | Total | Per Unit |
|---|---|---|
| Sales (20,000 units) | $1,200,000 | $60 |
| Less: Variable expenses | 900,000 | 45 |
| Contribution margin | 300,000 | $15 |
| Fixed expenses | 240,000 | |
| Net operating income | $ 60,000 | |

Management is willing to increase the company's profit and has asked for an analysis of a number of items.

**Required:**

**i)** Compute the company's break-even point in both units and sales dollars.[Use the Formula Method]

**ii)** Refer to the original data. Assume that next year management wants the company to earn a profit of at least $90,000. How many units will have to be sold to meet this target profit? [Use the Equation Method]

**iii)** Refer to the original data. Compute the company's margin of safety in dollar.

**iv)** Compute the company's degree of operating leverage at the present level of sales.

**v)** Assume that through a more intense effort by the sales staff, the company's sales increase by 8% next year. By what percentage would you expect net operating income to increase?

**vi)** In an effort to increase sales and profits, management is considering the use of a higher quality speaker. The higher-quality speaker would increase variable costs by $3 per unit, but management could eliminate one quality inspector who is paid a salary of $30,000 per year. The sales manager estimates that the higher-quality speaker would increase annual sales by at least 20%.

- Assuming that changes are made as described above, prepare a projected contribution format income statement for the next year.
- Compute the company's new break-even point in dollars of sales. [Use the formula method]
- Would you recommend that the changes be made?

5. a) Explain the two variances that are derived in the flexible budget performance report. 5 (CO1) (PO1)

b) Shine Wash is a Canadian company that owns and operates a large automatic carwash facility near Montreal. The following table provides data concerning the company's costs: 20 (CO3) (PO4)

| | Fixed Cost per Month | Cost per Car Washed |
|---|---|---|
| Cleaning supplies | | $0.80 |
| Electricity | $1,200 | 0.15 |
| Maintenance | | 0.20 |
| Wages and salaries | 5,000 | 0.30 |
| Depreciation | 6,000 | |
| Rent | 8,000 | |
| Administrative expenses | 4,000 | 0.10 |

For example, electricity costs are $1,200 per month plus $0.15 per car washed. The company expects to wash 9,000 cars in August and to collect an average revenue of $4.90 per car washed.

**Required:**

**i)** Prepare the company's Planning budget.

**ii)** The company actually washed 8,800 cars in August. Prepare the company's flexible budget for August.

**iii)** Prepare the company's Flexible Budget Performance Report. The actual operating results for August appear below:

Shine Wash
Income Statement
For the Month Ended August 31

| | |
|---|---|
| Actual cars washed | 8,800 |
| Revenue | $43,080 |
| Expenses: | |
| Cleaning supplies | 7,560 |
| Electricity | 2,670 |
| Maintenance | 2,260 |
| Wages and salaries | 8,500 |
| Depreciation | 6,000 |
| Rent | 8,000 |
| Administrative expenses | 4,950 |
| Total expense | 39,940 |
| Net operating income | $ 3,140 |

6. a) "All future costs are relevant in decision making." Do you agree? Why? 5 (CO1) (PO1)

b) Fine Engines Ltd. manufactures a variety of engines for use in heavy equipment. The company has always produced all of the necessary parts for its engines, including all of the carburetors. An outside supplier has offered to sell one type of carburetor to Fine Engines, Ltd., for a cost of $36 per unit. To evaluate this offer, Fine Engines Ltd., has gathered the following information relating to its own cost of producing the carburetor internally: 20 (CO2) (PO2)

| | **Per Unit** | **10,000 Units per Year** |
|---|---|---|
| Direct materials | $15 | $150,000 |
| Direct labor | 10 | 100,000 |
| Variable manufacturing overhead | 3 | 30,000 |
| Fixed manufacturing overhead, traceable | 6* | 60,000 |
| Fixed manufacturing overhead, allocated | 9 | 90,000 |
| Total cost | $43 | $430,000 |
| *One-third supervisory salaries; two-thirds depreciation of special equipment (no resale value). | | |

**Required:**

**i)** Assuming that the company has no alternative use for the facilities that are now being used to produce the carburetors, should the outside supplier's offer be accepted? Show all calculations.

**ii)** Suppose that if the carburetors were purchased, Fine Engines Ltd. could use the freed capacity to launch a new product. The segment margin of the new product would be $170,000 per year. Should Fine Engines Ltd. accept the offer to buy the carburetors for $36 per unit? Show all calculations.