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B.Sc. in SWE 2nd Semester 28 March 2022

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
Department of Computer Science and Engineering (CSE)

SEMESTER: FINAL EXAMINATION **SUMMER SEMESTER, 2020-2021**
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)** "The double-entry system determines the equality of accounting equation efficiently"- Explain. **5 (CO1) (PO1)**

   b) Moinul Hasan is a licensed dentist. During the first month of the operation of her business, the following events and transactions occurred. **20 (CO2, CO3) (PO1)**
   April 1: Invested $40,000 cash.
   April 1: Hired a secretary-receptionist at a salary of $600 per week payable monthly.
   April 2: Paid office rent for the month $1,000.
   April 3: Purchased dental supplies on account from Smile Company $4,000.
   April 10: Provided dental services and billed insurance companies $5,100.
   April 11: Received $1,000 cash advance from Trudy Borke for an implant.
   April 20: Received $2,100 cash for services completed and delivered to John Stanley.
   April 30: Paid secretary-receptionist for the month $2,400.
   April 30: Paid $1,600 to Smile Company for accounts payable due.

   Moinul 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 M.Hasan, Capital; No. 400 Service Revenue, No. 726 Salaries Expense, and No. 729 Rent Expense.
   Required:
   i. Journalize the transactions.
   ii. Post to the ledger accounts.
   iii. Prepare a trial balance on April 30, 2018.

2. **a)** The following information in Table-1 is related to the sole proprietorship of Leonard Mac, attorney. **8 (CO2, CO3) (PO1)**

Table 1: Information of Leonard Mac, Attorney

Legal service revenue, 2018	$350,000
Total expenses, 2018	211,000
Assets, January 1, 2018	85,000
Liabilities, January 1, 2018	62,000
Assets, December 31, 2018	168,000
Liabilities, December 31, 2018	85,000
Drawings—2018	?

Required:

Prepare the 2018 **Statement of Owner's Equity** for Leonard Mac's legal practice by calculating "Leonard Mac, Drawings" in 2018.

b) Dell Corporation's comparative balance sheets are presented below in Table-2: **17 (CO2, CO3) (PO1)**

Table2: Del Corporations Comparative Balance Sheet

	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**

Dell'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.

What are the differences between Financial Accounting and Management Accounting? 5 (CO1) (PO1)

b) Top Gear is a Canadian company that owns and operates a large automatic carwash facility near Montreal. The following Table-4 provides data concerning the company's costs: 20 (CO2, CO3) (PO1)

Table 3: Top Gear Costs

	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 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 in Table-4:

Table 4: Top Gear 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

4. a) Which costs are never relevant in decision making? 5 (CO1) (PO1)

b) Max Products manufactures 30,000 units of part S-6 each year for use on its production line. At this level of activity, the cost per unit for part S-6 is as follows in Table-5: 20 (CO2,

Table 5: Max Products Cost Per Unit of Part S-6

Direct materials	$ 4.00
Direct labor	10.00
Variable manufacturing overhead	3.00
Fixed manufacturing overhead	8.00
Total cost per part	$25.00

CO (PO

An outside supplier has offered to sell 30,000 units of part S-6 each year to Max Products for $21 per part. If Max Products accepts this offer, the facilities now being used to manufacture part S-6 could be rented to another company at an annual rental of $80,000. The $80,000 rental value of the space being used to produce part S-6 is an opportunity cost of continuing to produce the part internally. However, Max Products has determined that two-thirds of the fixed manufacturing overhead being applied to part S-6 would continue even if part S-6 were purchased from the outside supplier.

Required:

Should the outside supplier's offer be accepted? Show all computations.

5. a) Describe Total Fixed Cost. Is total fixed cost always remains same? Give your explanation with graphical example. **5 (CO1) (PO1)**

b) From the given information in Table-6, prepare a Cost Sheet for the period ended on 31st March, 2018. **20 (CO2, CO3) (PO1)**

Table 6: Stock Information

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%

6. a) Explain operating leverage. **5 (CO1) (PO1)**

b) Nike Company manufactures basketballs. The company has a ball that sells for $25. At present, the ball is manufactured in a small plant that relies heavily on direct labor workers. Thus, variable costs are high, totaling $15 per ball, of which 60% is direct labor cost. Last year, the company sold 30,000 of these balls, with the following results in Table-7: **20 (CO2, CO3) (PO2)**

Table 7: Nike Company Sells

Sales (30,000 balls)	$750,000
Variable expenses	450,000
Contribution margin	300,000
Fixed expenses	210,000
Net operating income	$ 90,000

Required:

i. Compute the CM ratio, break-even point in balls (use formula method), margin of safety in dollar at last year's sales level.

ii. Compute the degree of operating leverage.

iii. Assume that through a more intense effort by the sales staff, the company's sales increase by 10% next year. By what percentage would you expect net operating income to increase? Use the degree of operating leverage to obtain your answer.

Verify your answer to by preparing a new contribution format income statement showing 10% increase in sales.

iv. Refer to the original data. The company is discussing the construction of a new, automated manufacturing plant. The new plant would decrease variable costs per ball by 40%, but it would cause fixed costs per year to double. If the new plant is built, prepare a contribution format income statement with the changes.

- What would be the company's new CM ratio and new break-even point in dollar? (use equation method)
- If the new plant is built, how many balls will have to be sold next year to earn the same net operating income, $90,000, as last year? (use equation method)
- Compute the new Margin of Safety in dollar and percentage. If you were a member of top management, would you have been in favor of constructing the new plant? Explain.