

Instructions: This paper contains eight (8) questions. Candidates are required to answer question one (1) and four (4) other questions. Show all working clearly and neatly.

SECTION I

#M44

Question 1 - Compulsory:

A company manufacturing chalk dusters has a monthly fixed cost of \$900.00 and variable cost of \$9.00. Selling price per unit \$12.00 and capacity per period is 1,200 units.

You must prepare the following:

- a) an algebraic statement of:
- i) the total revenue function (1 mark)
 - ii) the total cost function (3 marks)
- b) A detailed breakeven chart (8 marks)
- c) Calculation of the breakeven point:
- i) in units (3 marks)
 - ii) as a percentage of capacity (2 marks)
 - iii) in dollars (2 marks)
- d) Calculate net income at a sales volume of 15% of capacity. (3 marks)
- e) Using the original data determine the new breakeven point if fixed costs are increased by 20% and variable cost reduced by 33 1/3%. (3 marks)



END OF SECTION I

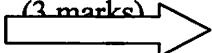


SECTION II

There are seven (7) questions in this section. Candidates are required to answer four (4) complete questions showing all working neatly and clearly. Each question carries more than one part.

2. a) Merrie Covers received a gift of \$7,000 at age 20. She invested the money at 10% compounded semi-annually until she was 35. She then converted the funds into an ordinary annuity paying \$3,000 monthly with interest at 5% compounded monthly. For how long will the annuity run? (7 marks)
- b) Cupid Enterprises received an invoice dated August 12, with terms 3/10 EOM for the items listed below:
- 5 computers at \$2,800 each less 20%, 10%.
 - 4 desks \$2,000 each less 15 1/2 %, 10%, 5%
- i) What is the last day for taking the cash discount? (2 mark)
 - ii) What is the amount due if the invoice is paid on Sept. 5? (2 marks)
 - iii) What is the amount of the cash discount if a partial payment is made such that a balance of \$1,500 remains outstanding on the invoice? (4 marks)

Please turn over 

3. a) Mary Smith wishes to have \$15,000 at the end of five years. If her savings can be invested at 6% compounded monthly, how much must she save at the end of each month during the five-year period? (4 marks)
- b) Debt payments of \$400 due today, \$500 due in eighteen months and \$900 due in three years are to be combined into a single payment due two years from now. What is the size of the single payment if interest is 12% compounded quarterly? Comparison (focal) date is two years from now. (7 marks)
- c) How long will it take \$400 to accumulate to \$760 at 17% compounded semi-annually? (4 marks)
4. a) What principal will amount to \$3,000 invested at 5% p.a. from June 1, 2006 to May 1, 2008? (3 marks) 
- b) How many days are required for \$400 to yield \$40 at 6% interest p.a.? (2 marks)
- c) Mrs. Spratt plans to deposit \$150 at the end of each month into a bank account for a period of 3 years after which she plans to deposit \$350 at the end of each month into the same account for another three years. If the bank pays interest at 4% compounded monthly, how much will she have in the account by the end of year six? (*Assume no withdrawals during the period*). (10 marks)
5. a) Mr. Smith purchased a stove and made a down payment of \$1,000. He agreed to pay \$500 per month thereafter for 2 years. If interest was 6% compounded monthly, what was the cash price of the stove? (5 marks)
- b) A promissory note for \$5,000 dated June 1, 1999 at 8% compounded quarterly for 6 ½ years is discounted on May 1, 2003. Find the proceeds of the note if it is discounted at 10% compounded monthly. (8 marks)
- c) How many days are needed for \$420.00 to yield \$12.80 interest at 5% simple interest? (2 marks)
6. a) On March 2, 2002 Mrs. Sawyer deposited \$1,500 into a Registered Retirement Savings Plan with First National Bank for 12 years at 10% compounded quarterly. Subsequently, the interest rate was changed to 12% compounded semi-annually on September 1, 2008. What will be the value of the investment at the end of its term if there are no further changes in the interest rate? (6 marks)
- b) A debt of \$3,000 due in 2 months is to be paid by 3 equal payments due 3, 5 and 7 months hence. What is the size of each payment if interest is 7% p.a. Comparison (focal) date is 5 months hence. (9 marks)
7. a) Loans of \$400 due 3 months ago and \$700 due today are to be repaid by a payment of \$600 in one month and the balance in 4 months. If interest is 10% and the comparison date is today, what is the size of the final payment? (7 marks)

Please turn over →

- b) Mr. Rivers bought a television set from a hire purchase company for \$4,000. He paid 10% down and agreed to pay the balance and interest at 12% p.a. in 40 monthly installments. Determine the payoff figure after the 25th payment is made. (*Use sum of the digits method*) (8marks)
8. a) Saving for his retirement fifteen years from now, Mr. Query sets up a savings plan whereby he will deposit \$50 at the end of each month for 12 years at interest of 6% compounded monthly.
- i) How much money will Mr. Query have in the savings plan on the date of his retirement? (4 marks)
- ii) How much would he have contributed? (3 marks)
- iii) How much of the total is interest? (2 marks)
- b) Mr. Claus bought a used truck for \$6,000. He made a down payment of \$500 and made quarterly payments of \$500 for 3 $\frac{3}{4}$ years. What is the nominal interest rate charged? (*use interpolation to solve*). (6 marks)

END OF EXAMINATION

Merry Christmas & Happy New Year