

	MIDTERM EXAMINATION SPRING 2007 MTH302 - BUSINESS MATHEMATICS & STATISTICS (Session - 2)	Marks: 45 Time: 90min
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StudentID/LoginID: _____

Student Name: _____

Center Name/Code: _____

Exam Date: Saturday, May 19, 2007

Please read the following instructions carefully before attempting any of the questions:

1. Attempt all questions. Marks are written adjacent to each question.
2. Do not ask any questions about the contents of this examination from anyone.
 - a. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.
 - b. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.
 - c. Write all steps, missing steps may lead to deduction of marks.
 - d. Attempt all the questions on Excel sheet and use only one excel sheet to solve all the questions. More than one sheets are not acceptable
 - e. Solve the questions on excel sheet in usual manner i.e. from upward to downward not from left to right.

****WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.**

For Teacher's use only										
Question Marks	1	2	3	4	5					Total

a) David bought a Mercedes taking out a loan for **30,000\$** to help pay for it. He must repay the loan in equal monthly payments for **11** years with an annual interest rate of **6%** what is his monthly payment?

Marks 5

b) Find the simple interest on **6** months loan of **Rs. 55,000** has an annual interest rate of **9%**?

Marks 5

Question No: 2 (Marks: 10)

a) Multiply the following matrices (using excel formulation) .Also write under what condition two matrices can be multiplied.

$$\begin{bmatrix} 2 & 3 & 1 \\ 3 & -5 & 1 \\ 3 & 1 & 4 \end{bmatrix} \quad \& \quad \begin{bmatrix} 2 & 1 \\ 1 & -2 \\ 1 & 9 \end{bmatrix}$$

A = & B =

Marks 5

b) A company gives a series discounts of **15%, 8% & 5%** on the product whose cost price is **650000 Rs.** Find the net price. If another company gives a discount of **20%** on same product .Find out which company is selling the product at lower price?

Marks 5

Question No: 3 (Marks: 10)

a) The basic salary of a person working in a Company is **12,000 Rs.** The house rent allowance is **45%** of basic salary also conveyance allowance is **2.5%** of basic pay. The person is a permanent employee so will be given provident fund at the time of retirement. Hence a deduction of **1/11th** part of salary is made every month. The employee also enjoys the facility of medical insurance which is **5%** of basic salary and social charges **5.8%** of basic salary. Find the actual remuneration of the person per month. Using Excel round your answer at each step up to **2** decimal places?

Marks 5

b) The Cost is **100,000**. The date of purchased is **20/05/2000** and the first period ended on **31/04/2001**. Salvage value is **Rs 500**. Using actual Basis find first period depreciation with the help of AMORDEGRC EXCEL FUNCTION if the depreciation rate is **15%**.

Marks 5

Question No: 4 (Marks: 10)

a) Calculate IRR after 4 years, 5 years and 2 years. With a guess of 10%:

Initial cost of a business	-75000
Net income for the first year	25,000

Net income for the second year	35,000
Net income for the third year	56,000
Net income for the fourth year	43,000
Net income for the fifth year	62,000

Marks 5

b) Find the depreciation allowance for twelfth year if initial cost is Rs 55,000, Salvage value is Rs. 7560 and years of useful life are 12 years.

Marks 5

Question No: 5 (Marks: 5)

a) The selling price of a product is **Rs 200** per unit. Variable cost associated with producing and selling the product is **Rs 120**. Assume that the fixed cost related to the product is **2,500 Rs**. How much units the firm should sell to break even.

b) If production capacity is **125** units per period, find BEP as percentage of capacity

Marks 5