



FINAL EXAMINATION
SEMESTER Fall 2005
MTH 302 (Business Mathematics & Statistics)

Total Marks: 50
Duration: 150mins

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Date	14th March, 2006

Maximum Time Allowed: (2:30 Hours)

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. **You have to solve the questions on Excel sheet and don't use more than two Excel sheets to solve all the questions.**
 - 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	Q1	Q2	Q3	Q4	Q5	Total
Marks						

[Answers of Excel Sheet.](#)

Question No: 1

Marks: 10

Find the **product** of matrices A and B, **inverse** of A and B. Also find the **determinant** of A and B. Using EXCEL function
Where

$$A = \begin{pmatrix} 1 & -2 & 3 \\ 4 & 5 & -6 \\ 7 & 8 & 9 \end{pmatrix}, B = \begin{pmatrix} 2 & 3 & 1 \\ 3 & 2 & 4 \\ 5 & 4 & 2 \end{pmatrix}$$

Question No: 2

Marks: 10

a). Use Excel function **NPV** to find the net present value of investment when annual discount is 9%, initial cost of investment one year from today is 150000. Return from first year is Rs 22000. Return from Second year is 45000; return from third year is 35000.

Marks 5

b). Find the **single discount rate** that is equivalent to the series 20%, 15%, 9%.

Marks 5

Question No: 3

Marks: 10

Find the **mean** and **harmonic mean** for the following data

Classes	Frequency.
30-39	2
40-49	3
50-59	11
60-69	20
70-79	32
80-89	25
90-99	7

Question No: 4

Marks: 10

For the following data :

X	3	4	5	6	7	8	9	10
Y	25	24	20	10	19	17	16	13

a) Find the regression equation by calculating **Slope** and **intercept** Excel functions.

Marks 5

b) Find **Correlation coefficient and covariance**.

Marks 5

Question No: 5

Marks: 10

a) For the following data

Marks 5

Day	Period.	Data
1	Morning	68
	Afternoon	29
	Evening	78
2	Morning	41
	Afternoon	72
	Evening	61
3	Morning	58
	Afternoon	89
	Evening	60

a). Find the **moving average**. Also plot **line graph** of moving averages.

Marks 5

b). A Surgery is successful for 55% patients. What is the probability of its success in at least 3 cases out of randomly selected 5 patients. Use **BINOMDIST** of Excel function.

Marks 5