

Bachelor of Commerce Online

BCOMOL

BCOC – 134: BUSINESS MATHEMATICS AND STATISTICS

ASSIGNMENT

2022-2023

Second Semester



School of Management Studies

Indira Gandhi National Open University

Maidan Garhi, New Delhi -110068



**BACHELOR OF COMMERCE ONLINE
BCOC – 134: BUSINESS MATHEMATICS AND STATISTICS**

ASSIGNMENT: 2022-23

Dear Students,

As explained in the Programme Guide, you have to do one Tutor Marked Assignment in this Course. The assignment has been divided into three sections. Section A Consists of long answer questions for 10 marks each, Section B consists of medium answer questions for 6 marks each and Section C consists of short answer questions for 5 marks each.

Assignment is given 30% weightage in the final assessment. To be eligible to appear in the Term-end examination, it is compulsory for you to submit the assignment as per the schedule. Before attempting the assignments, you should carefully read the instructions given in the Programme Guide.

1. Those students who are appearing in June 2022 Term End Examination they have to submit latest by in 15 March 2022.
2. Those students who are appearing in December 2022 exams. They should download the new assignment and submit the same latest by 15 October 2022.

You have to submit the assignment of all the courses to the Coordinator of your Study Centre.

TUTOR MARKED ASSIGNMENT

COURSE CODE	:	BCOC – 134
COURSE TITLE	:	BUSINESS MATHEMATICS AND STATISTICS
ASSIGNMENT CODE	:	BCOC – 134/TMA/2022-23
COVERAGE	:	ALL BLOCKS

Maximum Marks: 100

Note: Attempt all the questions.

Section – A

Q.1 Show that the following data that Fisher's ideal index satisfies the Time (5X2) Reversal Test and Factor Reversal Test:

Commodity	Price		No. of Units	
	2005	2018	2005	2018
I	6	10	50	60
II	2	2	100	100
III	4	6	60	60
IV	10	12	30	30
V	8	12	40	40

Q.2 For a Group of 50 male workers, the mean and standard deviation of their daily wages are Rs. 72 and Rs. 9 respectively. For another group of 40 female workers these are Rs. 54 and Rs. 6 respectively. Find the standard deviation for the combined group of 90 workers. (10)

Q.3 The data of advertisement expenditure (X) and sales (Y) of a company for 10 years shown in Table, determine the correlation coefficient between these variables. (5×2)

Advertisement Expenditure Rs. (X)	Sales Rs. (Y)
6	60
5	55
5	50
4	40
3	35
2	30
2	20
1.5	15
1.0	11
0.5	10

Q.4 Vidya's savings account has a balance of Rs. 2,654.39. The annual interest rate is 3% compounded monthly. Find the original principal amount deposited two years ago. **(5×2)**

Q.5 A stereo manufacturer determines that in order to sell x units of a new stereo, the price per unit, in rupees, must be $p(x) = 1000 - x$. The manufacturer also determines that the total cost of producing x units is given by $C(x) = 3000 + 20x$. **(10)**

a) Find the total revenue $R(x)$.

b) Find the total profit $P(x)$.

c) How many units must the manufacturer produce and sell in order to maximize profit?

d) What price per unit must be charged in order to make this maximum profit?

Section – B

Q.6 What do you mean by time series? Why do we analyse time series? **(6)**

Q.7 How do you identify an inferior good on the basis of income elasticity of demand? **(6)**

Q.8 What do you mean by maxima or minima of a function? **(6)**

Q.9 What is a parametric function? How can we differentiate parametric functions? **(6)**

Q.10 What is system of equations and how do you solve them? **(6)**

Section – C

Q.11 Write short notes on the following: **(5×2)**

a) Inverse matrix

b) types of discounts

Q.12 Differentiate between the following: **(5×2)**

a) Correlation and Regression

b) Matrix and determinant