1M208

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1M208

M.B.A. I - Sem. (Main / Back) Exam., - 2025

M – 108 Business Statistics and Analytics for Decision Making

Time: 3 Hours **Maximum Marks: 70**

Instructions to Candidates:

(i) The question paper is divided in three parts.

*(ii) **Part A** contains **10** questions which are compulsory. **Part B** contains **eight** questions out of which **five** are to be attempted. **Part C** contains **one** question which is compulsory.*

1. NIL 2. NIL

PART – A

[10×2=20]

Word limit 25 only

All questions are compulsory

Q.1 Define Zero or Null Matrix.

Q.2 Define Determinants.

Q.3 Form the following data calculate arithmetic mean –

No. of Calls (X)	0	1	2	3	4	5	6	7
Frequency (F)	14	21	25	43	51	40	39	12

Q.4 If N = 15, σ_x =3, σ_y = 3.03; Σ dxdy = +122. Find co-efficient of correlation.

Q.5 Explain the term "regression".

Q.6 If the aggregative prices of current year are 800 and that of base year 500, calculate index number for current year.

Q.7 What do you mean by inverse probability?

Q.8 Define compound interest.

Q.9 What is Sinking Fund?

Q.10 What do you mean by Break Even Analysis?

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PART – B

[5×6=30]

Attempt any five questions

Q.1 Solve the matrix equation

$$\begin{bmatrix} 5 & 4 \\ 1 & 1 \end{bmatrix} X = \begin{bmatrix} 1 & -2 \\ 1 & 3 \end{bmatrix}$$

Where X is a 2×2 matrix.

Q.2 Explain solution of a system of Linear Equations.

Q.3 Calculate Median from the following table –

Wages (in ₹.)	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25
No. of Employees	5	8	10	9	8

Q.4 State the meaning of correlation. Explain general rules for interpreting coefficient of correlation.

Q.5 From the following data obtain the two regression equation and find out value of coefficient of correlation (r) –

X:	3	4	6	7	10
Y:	9	11	14	15	16

Q.6 Following data relate to cost of living index number of workers. It is prepared to find the D.A. to workers in such a way as to compensate fully the rise in prices of food and clothing. What would be the D.A. expressed as a percentage to wages?

Items:	Food	Clothing	Fuel	Rent	Misc.
Indices:	300	350	300	280	140
Weights:	50	10	5	15	20

Q.7 Explain Addition Theorem and Multiplication Theorem of probability with illustrations.

Q.8 At what interest rate will ₹ 6000 yield ₹ 140 in simple interest in four months?

PART – C

[20]

(Compulsory)

Q.1 A profit Making Company want to launch a new product. It observes that the fixed cost of the new product is ₹ 35000 and the variable cost per unit is ₹ 500. The revenue function for the sale of x units is given by $500x - 100x^2$.

Find the –

(i) Profit function (ii) Break – Even values

(iii) The values of x that result in a loss

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