P P SAVANI UNIVERSITY

Second Semester of BBA Examination

June 2022

SMBB1120 Quantitative Methods 1

05.07.2022, Tuesday | Time: 9:00 a.m. To 11:30 am | Maximum Marks: 60

Instructions:

1. Make suitable assumptions and draw neat figures wherever required.

SECTION – I

Q - 1 Explain different types of matrix. **[05]**

Q - 2 Find the coefficient of correlation and coefficient of determination between the profit and expenses from the data given below: **[10]**

Firm	1	2	3	4	5	6	7	8	9	10
Expenses (Cr.)	2	4	6	8	9	11	13	16	17	19
Profit (Cr.)	20	22	17	15	11	9	7	4	5	2

OR

Q - 2 Given the following bivariate data: Find a regression line of Y on X and predict Y if X = 20 **[10]**

Expenses (Cr.)	1	2	3	4	6	8	9	10
Profit (Cr.)	5	7	1	9	2	10	11	15

[10]

Q – 3 Find mean, median and mode for following data. Why mean is not considered to be good measure?

Expenses (Cr.)	1	1	-2	3	9	6	-3	-1

OR

Q - 3 Calculate the mean and median for following data. **[10]**

Heights	No of Students	Heights	No of Students
130-132	9	138 - 140	10
132-134	6	140 – 142	2
134-136	1	142 - 144	3
136-138	5		

Q – 4 Explain different measures of central tendency. **[05]**

SECTION – II

Q - 1 Explain meaning of Skewness, Kurtosis, Primary Data, Secondary Data, Normal distribution. **[05]**

Q - 2 Prove multiplication rule for following matrix. **[10]**

$$A = \begin{matrix} -1 & 1 & -4 \\ 0 & 2 & -1 \\ 1 & 3 & -2 \end{matrix} \qquad B = \begin{matrix} 0 & -8 & -1 \\ -9 & -6 & -2 \\ -2 & 0 & -3 \end{matrix}$$

Q - 2 Prove inverse rule and multiplication rule for following matrix. **[10]**

$$A = \begin{bmatrix} 1 & -1 \\ -3 & -2 \end{bmatrix} \qquad B = \begin{bmatrix} -1 & 3 \\ 0 & 4 \end{bmatrix}$$

Q - 3 **[10]**

$$A = \begin{matrix} -1 & 1 & -4 \\ 0 & 2 & -1 \\ 1 & 3 & -2 \end{matrix} \qquad B = \begin{matrix} 0 & -8 & -1 \\ -9 & -6 & -2 \\ -2 & 0 & -3 \end{matrix}$$

Find

i) $|A| + |B| + |I|$

ii) $A - B - I$

iii) $A^3 - B^3$

OR

Q - 3 **[10]**

$$A = \begin{matrix} -1 & 1 & -4 \\ 0 & 2 & -1 \\ 1 & 3 & -2 \end{matrix} \qquad B = \begin{matrix} 0 & -8 & -1 \\ -9 & -6 & -2 \\ -2 & 0 & -3 \end{matrix}$$

Find

i) A^2 and B^2

ii) (AB)A

iii) $A^2 + BI$

Q - 4 Explain concept of Regression and Correlation. **[05]**

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