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MASTER OF BUSINESS ADMINISTRATION (M.B.A.)

EXAMINATION: MAY - 2025

SEMESTER - I

Sub.: Statistical & Quantitative Methods (MBA104)

Date : 28/05/2025

Total Marks : 60

Time: 2.00pm to 4.30pm

Instructions 1) All questions are compulsory.
: 2) Figures to the right indicate full marks.

Q. 1. Write Short notes on (Any Three) (15)

1. Linear Programming Problem
2. Measures of Central Tendency
3. Real-life Applications of Arithmetic Progression
4. Disadvantages of Spearman's Rank Correlation
5. Derivative

Q. 2. Answer in detail (Any One) (10)

1. A Company manufactures three varieties of soap. Represent the following information showing the quarterly sales (three months) using a multiple-bar diagram. Also draw Subdivided Bar chart with months .

Month	Quarterly Sales (In Units)		
	Soap1	Soap2	Soap 3
April	150	210	315
May	250	350	440
June	320	430	550

2. The data of distribution of production & the relatively defective items among them according to size-groups. Find the correlation coefficient between size & defect in quality & it's probable error –

Size-group	No. of items	No. of defective items
15 – 16	200	150
16 – 17	270	162
17 – 18	340	170
18 – 19	360	180
19 – 20	400	180
20 -21	300	114

Q. 3. Answer in detail (Any One)**(10)**

1. The table has the information about the expenditure on various heads in the first 5 years plan (in crores of Rs.)

Subject	Expenditure (in crores Rs.)		
	First plan	Second plan	Third plan
Agriculture and C.D.	361	529	1068
Irrigation and Power	561	865	1662
Village & Small Industries	173	176	264
Industry & Minerals	292	900	1520
Transportation & Communications	497	1300	1486
Social Services & Miscellaneous	477	830	1500

Represent the data in Pie chart .

2. Following data is of the two varieties of seeds find which variety is more

Variety A	25	50	45	30	70	42	36	48	34	60
Variety B	10	70	50	20	95	55	42	60	48	80

consistent.

Q. 4. Answer in detail (Any One)**(10)**

1. The following is the frequency distribution of the number of Telephone calls received in 245 successive one- minute intervals at an exchange-

No of calls	0	1	2	3	4	5	6	7
Freq uenc y	14	21	25	43	51	40	39	12

Estimate mean ,mode and median calls per minute.

2. The production manager of a company maintain that the flow time in day (y) ,depends on the number of operations (x) to be performed.

X	2	2	3	4	4	5	6	6	7	7
Y	8	13	14	11	20	10	22	26	22	25

Estimate Equation of Line of Regression Y on X .

Q. 5. Case Study**(15)**

Following table gives the aptitude test scores & productivity indices of 10 workers selected at random –

Aptitude Index (X)	60	62	65	70	72	48	53	73
Productivity Index (Y)	68	60	62	80	85	40	52	62

Questions:

1. Estimate regression Coefficient.
2. Write equation of Line of Regression.
3. Calculate the Regression lines & estimate the productivity Index of a worker whose test score is 92.
