



First Term Exam-2071
Subject: Business Statistics

Level: BBS - I
Time: 3Hrs.

F.M:100
P.M.:40

Set A

Group A
(10×2=20)

Brief Answer Questions.
 Attempt **All** Questions:

- If the mean of the following data set is 33, find the value of x .
 $x+10, 30, x+20, 4x+5, 40$
- Find the value of fourth decile (D_4) from the following set of marks of 6 students:
 Marks: 25, 60, 40, 75, 30, 50.
- The difference between the upper quartile and lower quartile of a certain frequency distribution is 4 and their sum is 16. Calculate the Quartile Deviation and its coefficient.
- Write brief notes on Deciles with its notation.
- Determine the modal production from the following data.

Production (in tons)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
frequency	8	18	23	37	47	26	16	5
- Only 10 students took a test, of which 4 students have failed with less than 8 marks. The marks of passed students were: 15, 8, 11, 9, 12, 10. What was the median marks of all students?

- If the coefficient of variation of a certain distribution is 9% and mean of that distribution is 40. What is the value of variance?
- Calculate the standard deviation from the following data:
 Monthly Income (Rs.000) : 25, 10, 30, 20, 40, 30, 15.
- The average price and standard deviation of price of Mansuli rice per kg. for the last seven days in two Markets M_1 and M_2 are recorded below:

	Average Price (Rs.)	S.D. of price (Rs.)
Market M_1	90	7
Market M_2	94	6

Which market shows greater variation in price.

- Calculate the mean deviation from mean from the following data the sales (kg): 25, 15, 35, 05, 45, 55.

Group B
(5×10=50)

Descriptive Answer Questions
 Attempt any **Five** Questions

- a. The average expenditure of the following frequency distribution is Rs.11,700. Find the value of x .

Expenditure (Rs.00)	100	110	120	$x+25$	140
No. of persons	1	4	2	2	1

- b. Calculate the weighted Geometric mean from the following informations.

Variable (X)	8	25	19	28
Weight (W)	3	5	7	15

12. Find the most suitable average from the following frequency distribution.
Also give the reason for your choice of average.

Income; Above (in 000Rs.)	0	10	20	30	40	50	60	70
No. of families	650	500	425	375	300	275	250	100

13. The incomes of 1000 families are given below:

Income (Rs.000)	40-59	60-79	80-99	100-119	120-139
No. of families	50	?	500	?	50

The median for the distribution is Rs.87,000. Calculate the missing frequencies. Also calculate the value of upper quartile.

14. Find the most suitable measure of dispersion from the following data:

Sales (Kg)	Less than 20	20-40	40-60	60-80	80-100	100-120	120 & above
No. of shops	54	100	140	300	230	125	51

Support for your choice of measure.

15. The mean and standard deviation of a set of 100 observations were found to be 40 and 12 respectively. Later on it was found that two observations were wrongly taken as 23 and 15 instead of 43 and 18. Calculate the correct mean and variance.

16. Compute the combined mean and standard deviation for the following data:

No. of administrative staffs = 75

No. of teaching staffs = 50

Average monthly salary of administrative staffs = Rs.4,500

Average monthly salary of teaching staffs = Rs.6,000

Standard deviation of salary of administrative staffs = Rs.800

Standard deviation of salary of teaching staffs = Rs.900

Group C

Analytical Answer Questions

Attempt any **Two** questions:

(2×15=30)

17. The incomes (in Rs.000) of 100 families are given below:

Income (Rs.000)	0-10	10-20	20-30	30-40	40-50
No. of families	14	?	27	?	15

The mode for the distribution is Rs.24,000.

- Find the number of families having incomes between Rs.10,000 to Rs.20,000 and Rs.30,000 to Rs.40,000.
- Calculate the highest income of poorest 25% families.
- Calculate the lowest incomes of richest 25% family.

18. A sample of 50 vehicles each of two models M_1 and M_2 is taken and their average running life in years is given below:

Life (Yrs)	0-5	5-10	10-15	15-20	20-25
Model M_1	6	10	20	12	2
Model M_2	8	12	17	10	3

- What is the average life of each Model of vehicle?
- What is the average life of both Models taken together?
- Which Model has greater uniformity? Why?

19. The following are the daily wages in rupees of 30 employees of a manufacturing company:

139	123	99	133	132	100	80	148	108
116	77	123	148	114	95	144	134	103
62	106	69	126	104	129	140	118	88
85	63	142						

The company provides bonuses of Rs.10, 15, 20, 25, 30 and 35 to the individuals in the wage groups exceeding 60 but not exceeding 75, exceeding 75 but not exceeding 90. This goes on upto the wage group not exceeding 150. Find:

- The average bonus paid to each employee.
- The standard deviation, variance and coefficient of variation of bonus distribution.
- The average daily wages

THE END



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Set B

Group A
(10×2=20)

Brief Answer Questions.
 Attempt **All** Questions:

1. Calculate the Mean Deviation from Mean from the following data set:
Marks (X) : 30, 20, 40, 10, 50, 60

2. The average price and variance of price of Basmati rice per kg. for the last seven days in two markets A & B are recorded below:

	Market A	Market B
Average Price (Rs.)	80	85
Variance of Price	36	25

Which market shows greater consistent in price?

3. Calculate the standard deviation from the following data:
 Daily Expenditure (Rs.00):
 20, 5, 25, 15, 35, 25, 10

4. If the coefficient of variation of a certain distribution is 9% and the variance of that distribution is 81, what is the value of mean of that distribution?

5. Only 10 students took a test of which 4 students have failed with less than 8 marks. The marks of passed students were:
 16, 9, 12, 10, 13, 11
 What was the median marks of all students?

6. If the mean of the following data set is 30, find the value of x :

10, 28, $x+18$ $4x+3$, 40

7. Find the value of Seventh decile (D_7) from the following set of marks of 6 students.

Marks: 30, 65, 45, 80, 35, 55

8. The difference between the upper quartile and lower quartile of a certain frequency distribution is 8 and their sum is 32. Calculate the Quartile Deviation and its coefficient.

9. Write brief notes on Percentiles with its notations.

10. Determine the modal value from the following:

Production (tons)	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Frequency	10	20	25	39	49	28	18	7

Group B
(5×10=50)

Descriptive Answer Questions:
 Attempt any **Five** Questions.

11. Compute the combined mean and standard deviation for the following data:

	Teaching Staff	Administrative Staff
Number	60	80
Average monthly salary (Rs.)	8000	6000
Standard deviation of salary	700	600

12. The mean and standard deviation of a set of 100 observation were found to be 35 and 4 respectively. If the observations 39, 32 and 34 are omitted from the given 100 observations. Find the mean and standard deviation of 97 observations.

13. Find the most suitable measure of dispersion from the following data:

Marks	Less than 10	10-20	20-30	30-40	40-50	50-60	60 & above
No. of students	5	8	12	20	12	10	3

Also support for your choice of measure.

14. a. Calculate the Geometric mean from the following data:

X	20	40	60	80	100
F	10	12	20	15	10

- b. The average income of the following frequency distribution is Rs. 117000. Find the value of x

Income (Rs.000)	100	110	120	$x + 25$	140
No. of families	1	4	2	2	1

15. Find the most suitable average from the following distribution. Also give the reason for your choice of average.

Marks up to	10	20	30	40	50	60	70	80
No. of students	25	40	60	75	95	125	190	240

16. The incomes of 1000 families is given below:

Income (Rs.000)	40-59	60-79	80-99	100-119	120-139
No. of family	50	?	500	?	50

The median for the distribution is Rs.87,000. Calculate the missing frequencies. Also calculate the value of lower quartile.

Analytical Answer Questions

Attempt any **Two** questions

(2×15=30)

17. A manufacturing company has 30 employees whose daily earning (in rupees) are given below:

143, 64, 86, 89, 119, 141, 130, 105, 127
70, 107, 63, 104, 135, 145, 96, 115, 149,
124, 78, 117, 109, 149, 81, 101, 133, 134,
100, 124, 140.

The company has decided to give bonuses of Rs.100, 150, 200, 250, 300 and 350 to the individuals in the wage groups exceeding 60 but not exceeding 75, exceeding 75 but not exceeding 90. This goes on upto the wage group not exceeding 150. Find:

- The average bonus paid to each employee.
- The standard deviation, Variance and coefficient of variation of bonus distribution.
- The average daily earning.

18. The marks of 100 students are given below:

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	14	?	27	?	15

The mode for the distribution is 24.

- Find the missing frequencies.
- Calculate the highest marks obtained by lowest 40% students.
- Calculate the lowest marks obtained by top 40% students.

19. A sample of 60 vehicles each of two models M_1 and M_2 is taken and their average running life in years is given below:

Life (Yrs)	0-4	4-8	8-12	12-16	16-20
Model M_1	8	12	22	14	4
Model M_2	10	14	19	12	5

- What is the average life of each model of vehicles?
- What is the average life of both models taken together?
- Which model has greater variability in life? why?

THE END