PrahladraiDalmia Lions College of Commerce and Economics
Internal questions for sem-I

DEPARTMENT :- B.M.S.

Subject:-BUSINESS STATISTICS Class:- F.Y.B.M.S.

<table>
<tr><td>Roll No.1005

Q1</td><td>Explain sample ,Population ,mean ,mode median .</td><td></td></tr>
<tr><td>Q2</td><td>Draw the histogram and Frequency Polygon of the data given below

<table><tr><td>Height</td><td>150-155</td><td>155-160</td><td>160-165</td><td>165-170</td><td>170-175</td><td>175-180</td></tr><tr><td>People</td><td>7</td><td>15</td><td>37</td><td>29</td><td>10</td><td>2</td></tr></table></td><td></td></tr>
<tr><td>Q3</td><td>Find the Median of the data given below.

<table><tr><td>Wages</td><td>0-50</td><td>50-100</td><td>100-150</td><td>150-200</td><td>200-250</td><td>250-300</td></tr><tr><td>No.of employees</td><td>15</td><td>60</td><td>70</td><td>90</td><td>50</td><td>30</td></tr></table></td><td></td></tr>
<tr><td>Q4</td><td>Find the Quartile Deviation and its Coefficient for the marks out 0f 100 obtained 80 students.

<table><tr><td>Marks</td><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td><td>60</td></tr><tr><td>No.of students</td><td>4</td><td>7</td><td>15</td><td>8</td><td>7</td><td>2</td></tr></table></td><td></td></tr>
<tr><td>Q5</td><td>Find Mode of the data given below.

<table><tr><td>Age Group</td><td>20-30</td><td>30-40</td><td>40-50</td><td>50-60</td></tr><tr><td>Mobile Users</td><td>24</td><td>38</td><td>23</td><td>15</td></tr></table></td><td></td></tr>
<tr><td>Roll No.1037

Q6</td><td>Write Merits and Demerits of Mean Mode and Median</td><td></td></tr>
</table>

Q7

Find the Median of the data given below.

Wages	0-50	50-100	100-150	150-200	200-250	250-300
No.of mployees	10	70	80	100	150	90

Q8

Describe types of graphs and ogives in detail.

Q9

III Find the Quartile Deviation and its Coefficient for the marks

Marks	10	20	30	40	50	60
No.of students	4	7	15	8	7	2

Q10

Find Mode of the data given below.

Age Group	20-30	30-40	40-50	50-60
Mobile Users	24	38	23	15

Roll No.1048

Write Merits and demerits of standard deviation and Quartiles

Q11

Q12

Draw the histogram and Frequency Polygon of the data given below

Height	150-155	155-160	160-165	165-170	170-175	175-180
People	12	18	48	22	12	5

Q13

Find the Arithmetic Mean of the data given below.

	lass Interval	0-10	10-20	20-30	30-40	40-50	50-60
	Frequency	6	8	11	10	9	6

Q14 Find the Arithmetic Mean of the data given below.

lass Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	8	11	10	9	6

Q15 Explain types of data in detail with example.

Roll No.1051 Find the Arithmetic Mean of the data given below.

lass Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	8	11	10	9	6

Q16

Q17 Explain types of GRAPHS in detail with example.

Q18 Explain MERITS AND DEMERITS OF QUARTILE AND MEDIAN .

Q19 Draw the histogram and Frequency Polygon of the data given below

Height	150-155	155-160	160-165	165-170	170-175	175-180
People	7	20	45	32	18	6

Q20 Find the Median of the data given below.

WAGES	0-50	50-100	100-150	150-200	200-250	250-300

No.of employees	12	54	69	100	59	18

Roll No.1059

Q21

Calculate Median and Mode for the following data

Class	10-30	30-50	50-70	70-90	90-110	110-130
Frequency	4	10	14	12	8	6

Q22

Draw a Multiple Bar Diagram for the regional percentage of viewers for a popular T.V. serial on D.D. Metro for 3 months.

Month	North	South	West	East
April	40	45	32	25
May	50	55	40	30
June	45	49	38	38

Q23

Represent the following data by a Histogram and a Frequency Curve (plot on the same graph)

Units	0-200	200-400	400-600	600-800	800-1000	1000-1200
No of Consumers	9	18	27	35	28	11

Find the missing frequency if the mean is 21.9

Q24

ii) Find the missing frequency if the mean is 21.9

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	5	-	13	21	16	8	3

Q25

Calculate Karl Pearson's Co-efficient of correlation for the following data:

X	17	8	12	13	10	12
Y	13	7	10	11	8	9

Roll No.1065

Q26

ii) Calculate Mean Deviation from Mean and its co-efficient for the following data:

Age	20-22	22-24	24-26	26-28	28-30	30-32	32-34
No of Employees	70	90	110	140	130	80	80

Q27

Calculate rank correlation co-efficient from the following data representing marks in Maths (X) and Accountancy (Y).

X	15	11	7	9	8	5	13
Y	12	10	5	7	6	4	9

Q28

i) Fit a trend line by the method of least squares and estimate the trend for the year 2009.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Export in lakhs of Rupees	8	10	12	11	13	15	14	17	17

Q29

Calculate Laspeyre's Paasche's, and Fishers' index number for the following data

Commodity	**Base Year**		**Current Year**	
	Price	**Quantity**	**Price**	**Quantity**
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Q30

ii) Calculate 3 Yearly Moving Averages for the following time series.

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Sales	53.6	48.4	45.6	51.2	46.8	42.5	40.7	45.1	39.6	38.8

Roll No.1089

Q31

A box contains 5 blue and 4 red balls. 4 balls are selected at random from the box. Find the probability that i) exactly 3 red balls are selected ii) at least three red balls are selected.

Q32

For the following payoff table, find the optimal decision using i) Maximin criterion ii) Maximax criterion iii) Laplace criterion iv) Minimax Regret Criterion.

Course of Action	States of Nature		
	S1	S2	S3
A1	35	100	38
A2	58	95	105
A3	45	30	91

Q33

Distinguish between Primary and Secondary Data.
Explain the following terms i) Experiment ii) Sample Space iii) Exhaustive Events iv) Independent Events v) Complementary Events.

Q34

Write short notes on i) Wholesale Price Index ii) Family Budget Method
Define for a random variable i) Expectation ii) Variance.
What is a time series? Describe the various components of a time series with suitable examples

Q35

Draw a less than ogive for the following data

Wages	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of workers	1	3	11	21	43	32	90

Hence find i) Q_1 and Q_3 ii) Number of workers having wages between 75 and 95.

Roll No.1090

Q36

If the mode for the following distribution is 130, find the missing frequency.

Class Interval	60-75	75-90	90-105	105-120	120-135	135-150
Frequency	3	3	6	-	7	6

Q37

Calculate the median height for the following data

Height (in cms)	158-162	162-166	166-170	170-174	174-178	178-182
No. of students	3	7	12	15	6	2

Q38

) The average marks of a group of 100 students in Statistics are 60 and for other group of 50 students , the average marks are 90. Find the average marks of the combined group of 150 students.

Q39

Calculate quartile deviation and its coefficient for the following data.

Daily Wages (in Rs.)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Workers	10	17	26	30	33	25	12	9

Q40

Calculate coefficient of correlation between price and demand from the following data and hence (t comment on the result.

Price	11	13	15	17	18	19	20
Demand	30	29	24	24	21	18	15

Roll No.1099

Q41

Given below are the mileage per litre of petrol for two brands of car in trial tests carried out.

Brand A	9.2	9.1	9.7	10	9.3	11	8.7	10.5
Brand B	7.5	9.5	10.2	14.1	11.5	12.1	11	13.2

Use coefficient of variation to determine which brand is more consistent? Why?

Q42

The following data give the number of T.V. Tubes produced by a certain manufacturer. Fit a straight line trend and hence estimate the production for the year 1995.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994
T.V Tubes (in hundreds)	15	17	20	25	30	31	30	32	34

Q43

Calculate Fishers' and Dorbish Bowley's Index number for the following data.

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Q44

Calculate three yearly moving averages for the following data.

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
No. of Students	1500	1700	1800	1750	1850	2000	1950	1900	2200	2200

Q45

Calculate for the following data the types of index number as mentioned below

a) Simple average of price relatives Method b) Simple Aggregative Method

Commodity	Base Year Price(in Rs.)	Current Year Price(in Rs.)
A	4	5
B	12	16
C	6	9
D	30	40
E	8	11

Roll No.1107

Q46

A Company has to choose one of the four types of Biscuits - Glucose, Multigrain, Coconut and Cream. Sales expected during the next year are highly uncertain. Marketing department estimates the profits considering manufacturing cost, promotional efforts and distribution set up etc as given in table below:-

Profits on estimated level of sales (in Rs. Lakhs) for Quantities

Course of Action	S_1 10,000 Quantity	S_2 20,000 Quantity	S_3 30,000 Quantity
Glucose (A1)	10	30	45
Multigrain (A2)	15	60	80
Coconut (A3)	20	35	60
Cream (A4)	30	55	70

What will be the company manager's decision if following criterion is applied? i) Maximin ii) Maximax iii) Hurwitz (alpha = 0.7) iv) Minimax regret.

Q47

Write short notes on : (Attempt any three)

i) Uses of Index Number

ii) Limitations of statistics

Q48 WRITE SHORT NOTE ON THE FOLLOWING

Merits and Demerits of median

Absolute and Relative Measures of Dispersion

Essentials of a good table

Q50

Calculate Fishers' and Dorbish Bowley's Index number for the following data.

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Roll No.1121	**Explain sample ,Population ,mean ,mode median .**	

Q51

Q 52 Draw the histogram and Frequency Polygon of the data given below

Height	150-155	155-160	160-165	165-170	170-175	175-180
People	7	15	37	29	10	2

Q53 Find the Median of the data given below.

Wages	0-50	50-100	100-150	150-200	200-250	250-300
No.of employees	15	60	70	90	50	30

Q54

Find the Quartile Deviation and its Coefficient for the marks out 0f 100 obtained 80 students.

Marks	10	20	30	40	50	60
No.of students	4	7	15	8	7	2

Roll No.1123

Q55 Find Mode of the data given below.

Age Group	20-30	30-40	40-50	50-60
Mobile Users	24	38	23	15

Q56 Write Merits and Demerits of Mean Mode and Median

Q57 Find the Median of the data given below.

Wages	0-50	50-100	100-150	150-200	200-250	250-300
No.of mployees	10	70	80	100	150	90

Q58	Describe types of graphs and ogives in detail.	
Q59	III Find the Quartile Deviation and its Coefficient for the marks Marks: 10 | 20 | 30 | 40 | 50 | 60 No.of students: 4 | 7 | 15 | 8 | 7 | 2	
Q60	Find Mode of the data given below. Age Group: 20-30 | 30-40 | 40-50 | 50-60 Mobile Users: 24 | 38 | 23 | 15	
Roll No.1125 Q61	Write Merits and demerits of standard deviation and Quartiles	
Q62	Draw the histogram and Frequency Polygon of the data given below Height: 150-155 | 155-160 | 160-165 | 165-170 | 170-175 | 175-180 People: 12 | 18 | 48 | 22 | 12 | 5	
Q63	Find the Arithmetic Mean of the data given below. lass Interval: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 Frequency: 6 | 8 | 11 | 10 | 9 | 6	
Q64	Find the Arithmetic Mean of the data given below.	

	lass Interval	0-10	10-20	20-30	30-40	40-50	50-60	
	Frequency	6	8	11	10	9	6	
Q65	Explain types of data in detail with example.							

Roll No.1137

Find the Arithmetic Mean of the data given below.

Q66

lass Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	8	11	10	9	6

Q67 Explain types of GRAPHS in detail with example.

Q68 Explain MERITS AND DEMERITS OF QUARTILE AND MEDIAN .

Q69 Draw the histogram and Frequency Polygon of the data given below

Height	150-155	155-160	160-165	165-170	170-175	175-180
People	7	20	45	32	18	6

Q70 Find the Median of the data given below.

WAGES	0-50	50-100	100-150	150-200	200-250	250-300
No.of employees	12	54	69	100	59	18

Roll No.1162

Q71

Calculate Median and Mode for the following data

Class	10-30	30-50	50-70	70-90	90-110	110-130
Frequency	4	10	14	12	8	6

Q72

Draw a Multiple Bar Diagram for the regional percentage of viewers for a popular T.V. serial on D.D. Metro for 3 months.

Month	North	South	West	East
April	40	45	32	25
May	50	55	40	30
June	45	49	38	38

Q73

Represent the following data by a Histogram and a Frequency Curve (plot on the same graph)

Units	0-200	200-400	400-600	600-800	800-1000	1000-1200
No of Consumers	9	18	27	35	28	11

Find the missing frequency if the mean is 21.9

Q74

ii) Find the missing frequency if the mean is 21.9

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	2	5	-	13	21	16	8	3

Q75

Calculate Karl Pearson's Co-efficient of correlation for the following data:

X	17	8	12	13	10	12
Y	13	7	10	11	8	9

Roll No.1164

Q76

ii) Calculate Mean Deviation from Mean and its co-efficient for the following data:

Age	20-22	22-24	24-26	26-28	28-30	30-32	32-34
No of Employees	70	90	110	140	130	80	80

Q77

Calculate rank correlation co-efficient from the following data representing marks in Maths (X) and Accountancy (Y).

X	15	11	7	9	8	5	13
Y	12	10	5	7	6	4	9

Q78

i) Fit a trend line by the method of least squares and estimate the trend for the year 2009.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Export in lakhs of Rupees	8	10	12	11	13	15	14	17	17

Q79

Calculate Laspeyre's Paasche's, and Fishers' index number for the following data

Commodity	**Base Year**		**Current Year**	
	Price	**Quantity**	**Price**	**Quantity**
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Q80

ii) Calculate 3 Yearly Moving Averages for the following time series.

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Sales	53.6	48.4	45.6	51.2	46.8	42.5	40.7	45.1	39.6	38.8

Roll No.1165

Q81

A box contains 5 blue and 4 red balls. 4 balls are selected at random from the box. Find the probability that i) exactly 3 red balls are selected ii) at least three red balls are selected.

Q82

For the following payoff table, find the optimal decision using i) Maximin criterion ii) Maximax criterion iii) Laplace criterion iv) Minimax Regret Criterion.

Course of Action	States of Nature		
	S1	S2	S3
A1	35	100	38
A2	58	95	105
A3	45	30	91

Q83

Distinguish between Primary and Secondary Data.
Explain the following terms i) Experiment ii) Sample Space iii) Exhaustive Events iv) Independent Events v) Complementary Events.

Q84

Write short notes on i) Wholesale Price Index ii) Family Budget Method
Define for a random variable i) Expectation ii) Variance.
What is a time series? Describe the various components of a time series with suitable examples

Q85

Draw a less than ogive for the following data

Wages	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of workers	1	3	11	21	43	32	90

Hence find i) Q_1 and Q_3 ii) Number of workers having wages between 75 and 95.

Roll No.1171

Q86

If the mode for the following distribution is 130, find the missing frequency.

Class Interval	60-75	75-90	90-105	105-120	120-135	135-150
Frequency	3	3	6	-	7	6

Q87

Calculate the median height for the following data.

Height (in cms)	158-162	162-166	166-170	170-174	174-178	178-182
No. of students	3	7	12	15	6	2

Q88

) The average marks of a group of 100 students in Statistics are 60 and for other group of 50 students , the average marks are 90. Find the average marks of the combined group of 150 students.

Q89

Calculate quartile deviation and its coefficient for the following data.

Daily Wages (in Rs.)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Workers	10	17	26	30	33	25	12	9

Q90

Calculate coefficient of correlation between price and demand from the following data and hence (comment on the result.

Price	11	13	15	17	18	19	20
Demand	30	29	24	24	21	18	15

Roll No.1178

Q91

Given below are the mileage per litre of petrol for two brands of car in trial tests carried out.

Brand A	9.2	9.1	9.7	10	9.3	11	8.7	10.5
Brand B	7.5	9.5	10.2	14.1	11.5	12.1	11	13.2

Use coefficient of variation to determine which brand is more consistent? Why?

Q92

The following data give the number of T.V. Tubes produced by a certain manufacturer. Fit a straight line trend and hence estimate the production for the year 1995.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994
T.V Tubes (in hundreds)	15	17	20	25	30	31	30	32	34

Q93

Calculate Fishers' and Dorbish Bowley's Index number for the following data.

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Q94

Calculate three yearly moving averages for the following data.

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
No. of Students	1500	1700	1800	1750	1850	2000	1950	1900	2200	2200

Q95

Calculate for the following data the types of index number as mentioned below

a) Simple average of price relatives Method b) Simple Aggregative Method

Commodity	Base Year Price(in Rs.)	Current Year Price(in Rs.)
A	4	5
B	12	16
C	6	9
D	30	40
E	8	11

Roll No.1186

Q96

A Company has to choose one of the four types of Biscuits - Glucose, Multigrain, Coconut and Cream. Sales expected during the next year are highly uncertain. Marketing department estimates the profits considering manufacturing cost, promotional efforts and distribution set up etc as given in table below:-

Profits on estimated level of sales (in Rs. Lakhs) for Quantities

Course of Action	S_1 10,000 Quantity	S_2 20,000 Quantity	S_3 30,000 Quantity
Glucose (A1)	10	30	45
Multigrain (A2)	15	60	80
Coconut (A3)	20	35	60
Cream (A4)	30	55	70

What will be the company manager's decision if following criterion is applied? i) Maximin ii) Maximax iii) Hurwitz (alpha = 0.7) iv) Minimax regret.

Q97

Write short notes on : (Attempt any three)

i) Uses of Index Number

ii) Limitations of statistics

Q98 WRITE SHORT NOTE ON THE FOLLOWING

Merits and Demerits of median

Absolute and Relative Measures of Dispersion

Essentials of a good table

Q99

Calculate Fishers' and Dorbish Bowley's Index number for the following data.

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Q100

Draw a more than ogive for the following data.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. fo students	4	6	10	15	25	22	11	7

Roll No.1187

Q101

If the median for the following distribution is 33, find the missing frequency

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	10	15	30		25	20

Q102

Calculate the mode for the following data.

Monthly wages(in hundreds)	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of employees	28	32	45	60	56	40	20

Q103

Calculate mean deviation from mean and its coefficient for the following data.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	5	8	15	16	6

Q104

Calculate Spearman's rank correlation coefficient for the following data.

X	53	98	95	81	75	71	59	55
Y	47	25	32	37	30	40	39	45

Q105

For a bivariate distribution, the following results are obtained:

Mean value of X = 65, mean value of y = 53

Standard deviation of x =4.7, standard deviation of y = 5.2

Correlation coefficient = 0.78

Obtain the regression equation of x on y and hence obtain the most probable value of x when y = 50

Roll. No. 1119

1.

Distinguish between Primary and Secondary Data.

Explain the following terms i) Experiment ii) Sample Space iii) Exhaustive Events iv) Independent Events v) Complementary Events.

2.

Write short notes on i) Wholesale Price Index ii) Family Budget Method

Define for a random variable i) Expectation ii) Variance.

What is a time series? Describe the various components of a time series with suitable examples

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3.

Draw a less than ogive for the following data

Wages	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of workers	1	3	11	21	43	32	90

Hence find i) Q_1 and Q_3 ii) Number of workers having wages between 75 and 95.

4.

Calculate mean deviation from mean and its coefficient for the following data.

Marks	0-10	10-20	20-30	30-40	40-50
No. of students	5	8	15	16	6

5.

For a bivariate distribution, the following results are obtained:

Mean value of X = 65, mean value of y = 53

Standard deviation of x =4.7, standard deviation of y = 5.2

Correlation coefficient = 0.78

Obtain the regression equation of x on y and hence obtain the most probable value of x when y = 50
