

Statistics And Business Mathematics

D R B SINDHU MAHAVIDYALAYA

B.Com. Semester - II

Question Set

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Problems fo revision:

1. Calculate mean, median and mode from the following data.:

Age group in year	Population(000)
Less than 20	13
Less than 25	34
Less than 30	69
Less than 35	106
Less than 40	166
Less than 45	208
Less than 50	223
Less than 55	233
Less than 60	241
Less than 65	246

(March 12 BBA Ans $a=36.22$; $m=36.42$; $z=37.8$)

2. Marks scored by 60 students in an examination in statistics are given below. Prepare a frequency distribution table with a class interval of 10 and calculate mean, median and mode.

6	10	58	56	0	25	32	35	35	9	78	17	60
	50	35	38	30	10	48	5	68	48	35	30	31
	21	23	23	50	72	19	25	35	40	46	42	45
	25	60	41	35	36	38	35	33	46	28	31	35
	42	46	38	39	45	48	50	28	29	31	55	

(March 11 BBA Ans Frequency=4,4,9,20,12,6,3,2 ; $a=37$; $m=36.5$; $z=35.8$)

3. Find out Mean, Median and Mode by grouping in the following distribution.

Marks in Stata	40-49	50-59	60-69	70-79	80-89	90-99
No. of students	12	30	24	20	12	2

(Ans $a=64.1$; $m=62.83$; $z=60.29$ by $(3m-2a)$ formula)

4. Calculate Mean, Median and Mode from the following data:

Marks below 20, 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80 and over

No. of students 7 18 22 25 30 16 9 3

(Ans $a=46.69$; $m=47.2$; $z=48.22$ by (mode is not proper by the first formula thus $3m-2a$ formula used)

5. From the following data calculate the Mean, Median and Mode:

Marks No. of Students

1-5	7
6-10	10
11-15	16
16-20	32
21-25	24
26-30	18
31-35	10
36-40	5
41-45	1

(Oct.12; Ans.a=20.36; m=20.03; z=18.83)

6. Find out Mean, Median and Mode from the following data.

Wages in Rs.	No. of Workers
More than 0	685
More than 10	500
More than 20	423
More than 30	389
More than 40	209
More than 50	73
More than 60	50
More than 70	0

(Oct.12 BBA; Ans. a=29; m=32.61; z=37.68)

7. From the following data calculate the Mean, Median and Mode:

Profit in `	No. of firms
10-20	15
10-30	33
10-40	63
10-50	83
10-60	100

(March 13; Ans. a=35.6; m=35.67; z= 35.46)

8. Calculate Mean, Median and Mode from the following data.

Income in `	No. of Persons
0-100	5
100-200	10
200-300	12
300-400	16
400-500	27
500-600	10
600-700	15

700-800 5
(March 13 BBA; a=415; m=425.93; z=439.28)

9. From the following frequency distribution from the data by inclusive method taking 4 as a magnitude of a class interval

10,15,17,22,11,16,19,24,29,18,15,18,24,25,26,32,14,17,20,23,
27,30,12,36,15,18,21,28,33,38,34,13,10,16,20,22,29,29,23,31
(BCCA 2013; 10-13=5; 14-17=8; 18-21=7; 22-25=7; 26-29=6; 30-33=4; 34-37=2; 38.41=1)

47. Mean of 22 items was 60. Later on it was discovered that two items were misread as 198 and 6 instead of 98 and 96-. Find correct mean.
(BCCA 2013; Ans. a=59.55)

10. Calculate Median and Arithmetic Mean from following data.

05 men get less than 5

12 men get less than 10

22 men get less than 15

30 men get less than 20

36 men get less than 25

40 men get less than 30

(MBA ; Ans. a=14.375, m=14, z=13)

11. Find out Mean, median and Mode from the following series:

Marks	No. of students
0-10	02
10-20	18
20-30	30
30-40	45
40-50	35
50-60	20
60-70	06
70-80	03

(Mar 15 & Mar 16 Old

a=37.08; m=36.67; z=36)

12. Calculate Mean, median and Mode from the following frequency distribution of marks at a test in statistics.

Marks	No. of students
5	6
10	5

15	15
20	10
25	5
30	4
35	3
40	2(Mar 15 Old a=18.7; M=15;z=15)

(13) Calculate Mean, median and Mode from the following frequency distribution of marks at a test in statistics.

Marks	No. of students
5	20
10	43
15	75
20	67
25	72
30	45
35	39
40	9
45	8
50	6
	n=384

(Mar 16 Old a=22.21 ; M=;20 z=)

14) Calculate Mean, median and Mode from the following data:

Age	No. of Persons
10-20	04
10-30	16
10-40	56
10-50	97
10-60	124
10-70	137
10-80	146
10-90	148
10-100	150

(Mar 16 a=46.46; m=45.37; z=40.67)

15. Calculate Mean, median and Mode from the following data:

Age	No. of Persons
10-20	04
10-30	16
10-40	56

10-50	97
50-60	27
60-70	13
70-80	9
80-90	2
90-100	2

($a=46.46$; $m=45.37$; $z=40.67$)

16. Calculate the medium from the following distribution of salaries of the employees.

Salary in 100 Rs.	No. of employees
Below – 20	20
20-30	18
30-40	10
40-50	08
50 and above	13

(O17- $m=$)

17. The following is the frequency distribution of the marks obtained by 251 students in an examination:

Marks obtained	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	15	20	25	24	12	31	72	52

Compute mean, median and mode.

(M18 $a=50.458$; $m=59.677$; $z=66.72$)

18. Find out Mean, Median and Mode

Marks	Upto 10	Upto 20	Upto 30	Upto 40	Upto 50	Upto 60	Upto 70	Upto 80
No. of students	02	20	50	95	130	150	156	160

(Oct2018)

Unit 1(B). GEOMETRIC AND HARMONIC MEAN

4 :The annual Income of five families is given below. Calculate Geometric mean and Harmonic mean:

Sr. No.	Annual Income
1	5
2	10
3	192
4	14374
5	20498

(Ans: G.M. =309.2; H.M. =16.38)

5: Calculate Harmonic mean

Items	70	75	80	82	85	90	95	97
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(Ans ; = G.M. = 83.79, HM=84.03)

5(b) Calculate Geometric mean:

Item 10, 97, 25, 30, 42, 95, 135, 310, 415, 220.

(Mar 16 G.M. 80.24, H.M.42.55)

7: Calculate Geometric Mean-

Items :	3775	8432	213	19	8	.5	.07	.006	.0009
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(Ans. G.M.=3.870, HM=0.0069)

8: Calculate Geometric Mean-

Items :	0.8972	0.0570	0.0081	0.5673	0.0002	0.0985
	0.0854	0.5671				

(Ans: G.M. =.06220; H.M. =.001548)

Problems on **discrete** series

10: Calculate Geometric Mean-

Age:	15	20	22	27	30	35	47	50
No.of Persons	3	4	7	10	6	3	2	2

(Ans. G.M.=26.54, Hm=25.3979)

11: Calculate Geometric Mean-

Scores:	50	75	110	120	130	135	150
Players	5	6	2	1	2	3	1

(Ans . G.M.=86.12, HM=79.75)

Problems on continuous series

13 : Calculate Harmonic Mean-

Marks	40-50	50-60	60-70	70-80	80-90	90-100
No. of Students	7	8	10	5	2	3

(Ans H.M.=60.6)

14 : Calculate Harmonic Mean of the following data:

MarksNo. of Students

30-40	6	
40-50		7
50-60	15	
60-70	8	
70-80	6	
80-90	13	
90-100		12

(Ans: HM =61.9195;)

15: Find out Harmonic mean and Geometric mean from the following table

Marks Students

0-50	3
50-100	7
100-150	12
150-200	16
200-250	35
250-300	20
300-350	8
350-400	2

(Ans: GM=190.00 ;H.M. =156.40;)

Weighted Geometric & Harmonic Mean:

16: Calculate Weighted Harmonic Mean from the following data:

Commodity	Index Number	Weight
Wheat	40	10
Rice	50	6
Pulses	120	4
Gram	150	2
Other	110	3

(Ans: W.H.M. =56.74; W.G.M.=63.14)

17: Find out weighted Geometric mean from the following

Commodity	Index Number	Weight
Wheat	150	10
Rice	170	6
Pulses	130	4
Gram	140	3
Other	135	5

(Ans: W.G.M. =147.1;)

18: Calculate weighted Geometric mean from the following data:

Subject	Marks	Weight
English	47	3
Marathi	83	5
Account	58	7
P.B.M.	46	9
B.Eco.	29	11
HRM	64	13

(Ans: W.G.M. =49.58;)

Extra Problems

19: Calculate Geometric Mean from the following value:

0.7530
0.2536
0.0952
0.0435
0.0064
0.0013
0.0007
0.0009
0.0205

(March 11(Old))Ans $\bar{x} = \frac{\sum fx}{\sum f} = \frac{22 + 5.9292}{18} = 17.9292 = 18 + 1.9292$ GM=.01646;
HM=0.0025)

20. Calculate Harmonic Mean from the following series

Marks	No of Students
0-10	2
10-20	3
20-30	5
30-40	4
40-50	1

(March 11 Ans HM=16.01; GM=20.71)

21) Calculate Geometric mean and Harmonic mean:

Family	Income in Rs.
A	85

B	70
C	10
D	75
E	500
F	8
G	42
H	250
I	40
J	37

(Oct.12; Ans.GM = 55.50; H.M.=28.8859)

22) Calculate Harmonic mean (weighted):

Items	Weight
1	5
0.5	10
10	20
45	10
175	15
0.01	2
4	15
11.2	8

(March 13; Ans W.H.M.=0.36797)

23) Calculate Weighted Geometric Mean from the following data-

Group	Index Number	Weights
Food	352	48
Fuel	220	10
Cloth	230	8
House Rent	160	12
Miscellaneous	190	15

(BCCA March 13; Ans. W.G.M.=263.8)

24) Calculate Harmonic Mean from the following series.

Size 5038, 258 888, 554 1228 40 58 7 310

(Mar 15 Ans H.M. 45.8862)

25) Calculate the Geometric mean from the following data.

Family	Income
1	85
2	70
3	10
4	75
5	500
6	8
7	42
8	250

9 40
10 37

(Mar15 Old Ans: G.M. =55.50; H.M. = 28.8859)

(26) Calculate the Harmonic mean (Weighted)

Premium	No. of shops insured
	150 7
	220 6
	300 5
	350 4
	380 3
400	2
450	1

(Mar15 OldAns:239.2344)

27) Calculate Harmonic mean:

Marks upto	No. of students
50	7
60	15
70	25
80	30
90	32
100	35

(Mar 16 HM=60.7)

1(b) Calculate the Geometric Mean and Harmonic mean:

Marks	No. of Students
20-30	5
30-40	13
40-50	7
50-60	11
60-70	4

(Oct18)