

BBA / BIM / BBM / Third Semester / STT 201: Business Statistics

Candidates are required to answer all the questions in their own words as far as practicable. The figures in the margin indicate full marks.

Group “A”

Brief Answer Questions:

[4 × 2 = 8]

1. A sub-committee of 5 members is to be formed out of a group consisting of 6 girls and 4 boys. Calculate the probability that the sub-committee will consists of 3 girls and 2 boys.
2. Potato chips distributor wants to estimate average monthly sales of its product. If the standard deviation is Rs 12, find the sample size if the maximum error is not more than Rs 3 with 99% level of confidence.
3. For a Binomial distribution with $n = 10$, $p = 0.6$, find $p(r=3)$.
4. Calculate quartile deviation from the following:

X:	3	7	12	18	20
f:	2	6	10	8	4

Group “B”

Short Answer Questions:

[4 × 3 = 12]

5. A sample of 50 farm labors engaged in peanut harvesting shows an average monthly wage rate of Rs 300 standard deviation of Rs 11. Using 0.05 level of significance verify if the sample result indicates that their current average monthly wage rate is higher than Rs 250.
6. Consider the data concerning five computer owners and lives of computer.

Owner:	A	B	C	D	E
Life (in years):	3	5	8	10	14

Take a random sample of size 2 without replacement. Show that mean of sample mean is equal to population mean. Also show that standard deviation of sampling distribution is less than population standard deviation.

7. Following are the distribution of monthly rent paid by 150 families in a locality.

Monthly Rent (in '00 Rs)	No. of families
0 – 20	15
20 – 40	25
40 – 60	60
60 – 80	30
80 – 100	20

Obtain the range of the rent of the middle 70% observed families.

8. What is sampling techniques? Describe various methods of sampling techniques.

Group “C”

Comprehensive Answer Questions:

[2 × 8 = 16]

9. Find the regression equation to estimate the sales when the expenditure on advertisement is Rs 15,000 and estimate the expenditure on advertisement when sales is Rs 20,000.

Expenditure on advertisement in '000 Rs	Volume of sales in '000
10	12
8	8
7	6
6	5
9	7
6	5
10	11

Also find the correlation coefficient.

10. The profit earned by two types of companies is given as follows:

Profit earned (in Rs '00)	No. of companies	
	Type A	Type B
0 – 4	4	9
5 – 9	20	16
10 – 14	46	40
15 – 19	18	19
20 – 24	10	11
25 – 29	2	5
Total	100	100

Which type of company has more uniform profit? If you have to invest, in which type of company you will invest and why? Give reason.



Lab Work

Full Marks: 24
Time: 1 Hr.

Practical Exam Questions Using MS-Excel

- 1) Find the expected frequencies assuming Poisson Distribution. [5]

No of accidents	0	1	2	3	4
No. of days	110	60	15	10	5

- 2) In a 60 MA Economics students selected as sample are found to have a mean height of 68 inches and a 50 MBS students selected as sample have a mean height of 69 inches. Would you conclude that management students are taller than economics students? Assume that standard derivation of height of post graduate students to be 2.24 inches. [5]
- 3) Construct a frequency distribution using intervals 68 – 80, 80 – 100 and so on.

91	79	66	98	127	139	154	147	192	132
88	97	92	87	142	127	184	145	162	120
95	89	86	98	145	129	149	158	141	100

Describe the characteristics of the frequency distribution as regards to control tendency, dispersion, skewness and kurtosis and draw conclusions. [5]

- 4) Draw a pie-diagram for the following data of expenditure of a family. [3]

Items	Expenditure per month (in Rs)
Food	400
Rent	120
Cloths	250
Education	100
Energy	50
Misc.	180

- 5) The monthly income of 100 families of a community are as follows: [6]

Monthly income '000'Rs:	0-4	5-9	10-14	15-19	20-24	25-29
No. of Families	10	35	70	20	10	5

- Find the lowest income of the richest 30% of the family.
- Find the highest income of the poorest 25% of the family.



Note: The observer will be appointed by FOM for practical examination to be conducted immediately after the completion of semester end examination in the respective campuses / colleges. The campuses / colleges are responsible to manage the practical examination. The campuses / colleges should print the Lab-work answer sheet of individual student and submit it to the FOM immediately the completion of the Lab-work examination.