

BACHELOR OF VOCATION
Management Financial Services
Subject: Business Statistics & SPSS
Subject Code: BFS604
Semester: Third
January 2021
Theory (External): 70 Marks
Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 2 marks.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 10 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number

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SECTION --A (SHORT/OBJECTIVE TYPE QUESTIONS)

(10x2=20 Marks)

- A. In a factory, a screw manufacturing machine is repaired. After repairing, the quality of product is to be checked. Please suggest the statistical measure for this.
- B. Explain primary data and secondary data with examples.
- C. Differentiate between discrete and continuous frequency distribution by examples of real life.
- D. Explain method of classification of data with example and why is it important?
- E. Write down the property of ideal measure of central tendency.
- F. In an experiment, the height and age of growing children are recorded. It is found that height and age are directly proportional to each other. Can you explain in detail; which statistical concept is indicated by the experiment?
- G. What do you mean by multivariate analysis?
- H. Represent the following frequency distribution by a histogram.

Class Interval	0-10	10-15	15-30	30-40	40-60	60-80
Frequency	8	10	36	44	52	20

- I. Draw ogive curve for the following data pertaining to income distribution for 1500 employees.

Monthly income (in thousand Rs.)	18-20	21-23	24-26	27-29	30-32	33-35	36-38
No. of employees	10	35	140	300	370	320	200

J. Write short note on the following

- a) Probable Error
- b) Spearman's Rank Correlation Coefficient

SECTION -B (ESSAY TYPE QUESTIONS)
(5x10=50 Marks)

1 Define Statistics. Explain its types, and importance to trade, commerce and business.

2 Calculate the mean, median and mode from the following data:

Weight (gm)	Number of Articles
0-10	14
10-20	17
20-30	22
30-40	26
40-50	23
50-60	18
Total	120

3 Two observers brings the following two sets of data which represent measurement of same quantity:

I	II
105.1	105.3
103.4	105.1
104.2	104.8
104.7	105.2
104.8	106.7
105.0	102.9
104.9	103.1

Calculate the standard deviation and variance for each observation. Which set of data is more reliable? Can the same conclusion can be reached by calculating the mean deviation?

- 4 The following series relates to the marks secured by students in an examination.

Marks	No. of students
0-10	11
10-20	18
20-30	25
30-40	28
40-50	30
50-60	33
60-70	22
70-80	15
80-90	12
90-100	10

Calculate the Pearson's Coefficient of skewness and quartile coefficient of skewness.

- 5 Calculate Karl Pearson's coefficient of correlation between expenditure on advertising (X) and sales (Y) from the data given below and calculate its probable error also:

X: 39 65 62 90 82 75 25 98 36 78

Y: 47 53 58 86 62 68 50 91 51 84

What conclusion can be drawn from the correlation?

- 6 The following table shows the number of motor registrations in a certain territory for a term of 5 years and the sale of motor tyres by a firm in that territory for the same period.

Year	Motor Registrations	No. of Tyres Sold
2013	600	1,250
2014	630	1,100
2015	720	1,300
2016	750	1,350
2017	800	1,500

Find the regression equation to estimate the sale of tyres when the motor registration is known. Estimate sale of tyres when registration is 850.

7

The height of a child increases at a rate given in the table below. Fit the straight line using the method of least-square and calculate the average increase and the standard error of estimate.

Month:	1	2	3	4	5	6	7	8	9	10
Height:	52.5	58.7	65	70.2	75.4	81.1	87.2	95.5	102.2	108.4

8

Explain the following

- a. Principal Component Analysis
- b. Discriminant Analysis
- c. Cluster Analysis.

*****END OF PAPER*****