

Exam. Code : 110103

Subject Code : 2686

**Bachelor of Vocation (Banking & Financial Services)**

**3<sup>rd</sup> Semester**

**BUSINESS STATISTICS**

**Paper—BVC-301**

Time Allowed—3 Hours]

[Maximum Marks—50

**SECTION—A**

**Note :—** Attempt any **ten** parts. Each part carries **1** mark.

1. (a) Explain Statistics in Singular and Plural sense.
- (b) Explain Mean deviation and coefficient of Mean deviation.
- (c) Why standard deviation is preferred to mean deviation ?
- (d) “Median is not affected by extreme values unlike arithmetic mean”. Discuss.
- (e) What is the basic difference between weighted and unweighted Index number ?
- (f) Define Seasonal Components.
- (g) What is Fisher’s ideal index number ? Why is it so called ?

- (h) What do you mean by 'Mutually Exclusive' events ?
- (i) Discuss difference between Correlation and Regression.
- (j) What do you mean by Probable error ?
- (k) Discuss the limitations of Arithmetic Mean.
- (l) Define Conditional probability giving example.

### SECTION—B

**Note** :— Attempt any **two** questions. Each question carries **10** marks.

2. "Statistical analysis is of vital importance for successful businessmen, economists, administrators and educationalists". Discuss with illustrations.
3. Find the mean and standard deviation for the following data :—

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	6	14	10	8	1	3	8

4. Two managers ranked 12 employees working under them in order of performance as follows :

Employees	1	2	3	4	5	6	7	8	9	10	11	12
Manager I	5	6	1	2	3	8.5	8.5	4	7	11	10	12
Manager II	5.5	5.5	2	2	2	9	7	4	8	10.5	12	10.5

Calculate Spearman's Rank Correlation Coefficient.

5. (a) Find out the modal weight from the following data of the weights of 122 persons :

Weight (in lbs.)	100-110	110-120	120-130	130-140	140-150	150-160	160-170	170-180
No. of persons	4	6	20	32	33	17	8	2

- (b) For the following data, obtain the Mean by using step deviation method :

Strength	No. of lots
60-65	1
65-70	3
70-75	5
75-80	10
80-85	18
85-90	20
90-95	16
95-100	14
100-105	6
105-110	4
110-115	2
115-120	1

### SECTION—C

**Note** :— Attempt any **two** questions. Each question carries **10** marks.

6. Calculate Fisher's Ideal Index from the following data and prove that it satisfies both Time Reversal Test and Factor Reversal Test :—

Items	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	6	50	10	60
B	2	100	2	120
C	4	60	6	60

7. (a) "All periodic variations are not necessarily seasonal."  
Discuss this statement with suitable examples.
- (b) Sixty percent of the employees of the XYZ Corporation are college graduates. Of these, ten percent are in sales. Of the employees who did not graduate from college, eighty percent are in sales. What is the probability that
- (i) An employee selected at random is in sales ?
- (ii) An employee selected at random is neither in sales nor a college graduate ? 5,5
8. (a) Three newspapers A, B, C are published in a certain city. It is estimated from a survey that of the adult population : 20% read A, 16% read B, 14% read C, 8% read both A and B, 5% read both A and C, 4% read both B and C, 2% read all the three. Find what percentage read at least one of the papers.
- (b) A problem of statistics is given to two students A and B. The odds in favour of A solving the problem are 6 to 9 and against B solving the problem 12 to 10. If A and B attempt to solve the problem independently, then find the probability of the problem being solved. 5,5
9. For the following data, verify that the 5 yearly weighted moving average with weights 1,2,2,2,1 respectively is equivalent to 4 yearly centered moving average

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sales (Rs. In Lakhs)	5	3	7	6	4	8	9	10	8	9	9

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