

**Exam. Code : 110103****Subject Code : 3740****Bachelor of Vocation (Banking and 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.

1. (i) State the merits and demerits of Spearman's Rank Correlation Method.
- (ii) Explain the term 'Coefficient of Correlation'.
- (iii) What do you understand by Equally Likely Events ?
- (iv) Distinguish between trend and seasonal fluctuations in time series.
- (v) From the following data, find the first and third quartiles :  
15, 20, 30, 40, 50, 64, 70, 75.
- (vi) What are the limitations of Statistics ?
- (vii) Define Probability.
- (viii) Define Consumer Price Index.
- (ix) Define Range.
- (x) What is Probable Error ?
- (xi) Explain concept of Conditional Probability.
- (xii) Differentiate Median and Mode.  $10 \times 1 = 10$

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2. Define the term "Statistics" and discuss its scope and functions.
3. Find the Mean Deviation from the Mean and Median for the following data :

Class Interval	Frequency
0—10	8
10—20	12
20—30	10
30—40	8
40—50	3
50—60	2
60—70	7

4. Calculate the Coefficient of Correlation for the ages of husbands and wives :

Age of Husband (Years)	Age of Wife (Years)
23	18
27	22
28	23
29	24
30	25
31	26
33	28
35	29
36	30
39	32

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5. In the frequency distribution of 100 families given below, the number of families corresponding to expenditure groups 20—40 and 60—80 are missing from the table. However, median is known to be 50. Find the missing frequencies :

Expenditure	No. of Families
0—20	14
20—40	?
40—60	27
60—80	?
80—100	15

$$2 \times 10 = 20$$

### SECTION—C

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

6. From the following data calculate the price index numbers by :
- Laspeyre's method
  - Paasche's method
  - Marshall-Edgeworth method and Fisher's Ideal method.

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

7. (a) A salesman is known to sell a product in 3 out of 5 attempts while another salesman in 2 out of 5 attempts. Find the probability that :
- No sale will take place when they both try to sell the product.
  - Either of them will succeed in selling the product.
- (b) Discuss Additive Theorem of Probability.
8. Calculate trend values by method of Least Squares from the data given below and also estimate the sales for the year 2016 :

Year	Sales (in crores)
2012	12
2013	18
2014	20
2015	23
2016	27

9. (a) Discuss various components of Time Series.
- (b) Discuss the importance of Index Numbers.

$$10 \times 2 = 20$$