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**BBABMC 257/BBMBMC 257**

**IV Semester B.B.A./B.B.M. Degree Examination, April/May 2019**

*(Credit Based Semester Scheme)*

*(2012 Scheme)*

**BUSINESS STATISTICS**

Time : 3 Hours]

[Max. Marks : 80

**Instructions :**

1. *Mathematical tables will be supplied on request.*
2. *Only simple calculators are allowed.*

**SECTION - A**

1. Answer **any ten** of the following, **1** mark each :

**(10 × 1 = 10)**

- (a) Define Statistics.
- (b) Define quantitative classification with an example.
- (c) Write any two advantages of a diagrammatic presentation of data.
- (d) Define a measure of Central Tendency.
- (e) Write the relation between Mean, Median and Mode in a skewed distribution.
- (f) Calculate the Mode Number of children / couple  
1, 0, 2 3 4 2 1  
2, 2, 1
- (g) Calculate the coefficient of variation, Given AM = 40, Standard deviation = 5.
- (h) Write any two properties of correlation coefficient.
- (i) What is meant by inclusive class interval?
- (j) Calculate a suitable Index number, Given  $\Sigma p_0q_0 = 120$  ,  $\Sigma p_1q_0 = 182$  .
- (k) Given the straight line equation  $Y = 80 + 3t$  . Estimate the value of  $t = 8$  .
- (l) Which are the two methods of measuring a Secular Trend in a Time Series?

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SECTION - B

Answer **any five** of the following, **5 marks each** :

**(5 × 5 = 25)**

2. Write various sources of Secondary data.

3. Draw a Histogram and hence find Mode.

Marks :	0-10	10-20	20-30	30-40	40-50
Students :	10	18	26	22	14

4. Calculate Median for the following frequency distribution.

Class :	30-36	36-42	42-48	48-54	54-60	60-66
Frequency :	8	12	21	28	17	14

5. Calculate the Geometric Mean for the following data :

Marks :	12-20	20-28	28-36	36-44	44-52	52-60	60-68
Students :	13	24	36	17	8	6	5

6. Draw less than Ogive and hence find Median :

Height (cms) :	140-145	145-150	150-155	155-160	160-165
Students :	8	13	26	18	5

7. Graphically solve the following L.P.P.

Maximize  $Z = 100x + 20y$

Such that,

$x + 2y \geq 20$

$2x + 5y \leq 80$

and  $x \geq 0, y \geq 0$

8. Given the following data Estimate the value of X when Y = 78.

	X	Y
Mean	68.5	76.3
S.D	3	4

Coefficient of correlation = 0.92.

**SECTION - C**Answer **any three** of the following, **15** marks each :**(3 × 15 = 45)**

9. (a) Calculate the Karl Pearson's Correlation Coefficient.

**(10)**

Y \ X	X			
	10-20	20-30	30-40	40-50
18	3	7	-	-
22	-	10	6	4
26	-	-	4	6
30	-	-	5	5

- (b) Calculate Harmonic Mean for the following data :

**(5)**

X: 45 6 7 12 17 19

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10. (a) Calculate Mean Deviation from Mean for the following frequency distribution :

**(10)**

Class :	10-20	20-30	30-40	40-50	50-60	60-70
Value :	6	12	16	8	5	3

- (b) Calculate Spearman's Rank Correlation Coefficient.

**(5)**

X: 61 58 63 67 61 76 82

Y: 43 59 42 62 59 48 49

11. (a) Obtain 3-yearly moving averages as trend values for the data given below :

**(5)**

Year :	1991	1992	1993	1994	1995	1996	1997	1998
Value :	108	93	109	110	99	112	118	106

- (b) (i) In which company Total Salary is Higher?

- (ii) Which is consistent?

**(5)**

	Companies	
	A	B
Number of workers	100	120
Average salary (in Rs.)	283	361
S.D. (in Rs.)	8	9



(c) Draw a blank table to show the strength of a college according to :

(i) Faculty : Arts, Science, Commerce

(ii) Sex : Boys, Girls

(iii) Year : 2001-02, 2002-03, 2003-04

(5)

12. (a) Fit a Straight line trend to the following data :

(5)

Year :	2000	2001	2002	2003	2004	2005	2006
Production :	108	99	110	112	109	107	113

(b) Calculate the Fisher's Index number.

(5)

Item	Price (₹)		Quantity	
	2000	2004	2000	2004
A	18	22	100	110
B	13	19.5	85	120
C	12	16	120	150
D	10	13	160	240
E	7	10	30	45
F	25	37	60	90

(c) Using the following data calculate the cost of Living Index Number.

(5)

Item	Price		Weight
	2001	2006	
A	100	125	10
B	85	115	8
C	75	115	6
D	61	91	2