Reg. No. | | | | | | | | | |

BBMBMC 257

Credit Based Fourth Semester B.B.M. Degree Examination, April/May 2015
(2012 Scheme)
BUSINESS STATISTICS

Time : 3 Hours Max. Marks : 80

Instructions : *1) Only simple calculators are **allowed**.*
*2) Log tables are provided if **necessary**.*

SECTION – A (**One** mark **each**) **(1×10=10)**

1. Answer **any ten** questions :

a) Write any two sources of secondary data.

b) Give an example for temporal classification.

c) The mean and median of a slightly skewed distribution are 12 cms and 12.7 cms respectively. Find the mode.

d) Calculate the harmonic mean of 4, 8 and 16.

e) In a data, the sum of upper and lower quartiles is 76. Their difference is 14 calculate the coefficient of quartile deviation.

f) If coefficient of variation is 22% and if standard deviation is 4 find the mean.

g) Write any one property of coefficient of correlation.

h) In a bivariate data the regression coefficients are –7.3 and –0.11. Find coefficient of correlation.

i) Price index for the current year is 125. Then what is your conclusion ?

j) 'Increasing percentage of literacy'. What type of variation is this ?

k) What is meant by formulation of L.P.P. ?

l) In stem and leaf plot, which digit of given number is taken to form stem ?

P.T.O.

SECTION – B (**Five** marks **each**) **(5×5=25)**

Answer **any five** questions :

2. What are the functions of statistics ?

3. Draw the ogives for the distribution given below and find the medium.

I.Q. :	60-70	70-80	80-90	90-100	100-110	110-120	120-130
No. of children :	2	8	15	26	18	5	1

4. The mean monthly salaries paid to all the employees of the company was ₹ 5,000. The mean monthly salaries paid to male and female employees were ₹ 5,200 and ₹ 4,200 respectively. Determine the percentage of males and females employed by the company.

5. Calculate mean deviation from median :

Age :	20-30	30-40	40-50	50-60	60-70
Persons :	11	23	40	16	10

6. Compute coefficient of rank correlation :

Marks in internal assessment :	8	12	16	14	10	12
Marks in final examination :	63	56	75	80	43	38

7. Calculate 5 yearly moving averages for the following data.

Year :	2005	2006	2007	2008	2009	2010	2011	2012	2013
No. of failures :	24	26	30	32	20	17	13	10	8

8. Compute the cost of living index number from the following information :

Item	**Price index**	**Group weight**
Food	200	20
House rent	250	10
Clothing	150	5
Fuel	250	10
Misc.	200	5

SECTION – C (**15** marks **each**) **(15×3=45)**

Answer **any three** questions :

9. a) Draft a blank table to show the distribution of employees in an office according to
   i) Sex : Male, female
   ii) Salary grade : Below 10,000
   10,000 – 20,000
   above 20,000
   iii) Designation : Supervisor, assistant clerk. **5**

   b) Compute geometric mean of the following data : **5**

Marks :	10 – 20	20 – 30	30 – 40	40–50	50–60
No. of students :	5	7	15	25	8

   c) Find quartile deviation and its coefficient for the following distribution : **5**

Cl :	0-19	20-39	40-49	50-59	60-69	70-79
Frequency :	15	31	19	11	7	7

10. a) Calculate standard deviation and coefficient of variation of the following distribution.

Cl :	0-30	30-60	60-90	90-120	120-150	150-180	180-210
f :	9	17	43	82	81	44	24

10

   b) The five-number summary of number of grapes per bunch of three varieties of grapes are given below. Represent the data by box plot.

	No. of grapes per bunch		
	Variety A	**Variety B**	**Variety C**
Minimum	53	46	44
Lower quartile	58	51	49
Median	64	53	57
Upper quartile	66	58	62
Maximum	73	64	64

5

11. a) Calculate the correlation coefficient between advertisement expenditure and sales using the following data

Sales ('000 Rs.)	Expenditure on advertisement 5-15	15-25	25-35	35-45
75-125	4	1	–	–
125-175	7	6	2	1
175-225	1	3	4	2
225-275	1	1	3	4

10

b) From the following data find the likely value of x when y is 36

	x	y
Mean	14.1	27
S.D	0.9	3

$r = -0.6$. 5

12. a) Calculate Fisher's index number.

Item	Price (Rs./quintal) Base year	Current year	(Quantity sold) Base year	Current year
Rice	400	850	100	120
Wheat	320	690	20	60
Sugar	720	1600	10	10
Dhal	720	2100	10	20

5

b) For the following time series fit a linear trend by the method of least squares. Estimate the sales for the year 2008.

Year :	1990	1992	1994	1996	1998	2000	2002	2004
Sales ('000 units):	103	106	95	93	98	93	90	86

5

c) Graphically solve

Maximize $z = 100x + 20y$

Such that $x + 2y \geq 20$

$2x + 5y \leq 80$

$x \geq 0, y \geq 0$. 5