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

BBMBMC 257

Credit Based Fourth Semester B.B.M. Degree Examination, April/May 2017
(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 **(1×10=10)**

(**One** mark **each**)

Answer **any ten** questions :

1. a) Mention various types of classification.
   b) State one use of diagrammatic representation of data.
   c) What is the geometric mean of 4 and 16 ?
   d) When do you prefer median to other averages ?
   e) If standard deviation and coefficient of variation of a distribution are 10 kgs and 23% respectively, find the mean.
   f) In a bivariate data variance of the variables are 49 and 81. If the covariance is – 12, find the coefficient of correlation.
   g) If $b_{xy} = -\frac{1}{3}$ and $b_{yx} = -\frac{3}{4}$, find r.
   h) In stem and leaf plot, stem represent which digit ?
   i) If Laspeyre's index number is 212.6 and Paasche's index number is 208.4, find Fisher's index number.
   j) What is 'price relative' ?
   k) What are components of time series ?
   l) Under which condition, graphical solution to L.P.P. is applicable ?

P.T.O.

SECTION – B

(5×5=25)

(Five marks each)

Answer **any five** questions :

2. What is secondary data ? What are the sources of secondary data ? Explain with examples.

3. Draw the Ogive curves for the following frequency distribution of heights of students and find the median.

Height (cms) :	140-150	150-160	160-165	165-170	170-180	180-190
No. of Students :	5	15	15	20	10	2

4. Find the geometric mean :

x :	110	115	120	125	130
f :	4	11	21	6	2

5. Calculate the quartile deviation for the following data :

Class :	0-10	10-20	20-30	30-40	40-50
Frequency :	4	15	28	16	7

6. The following are the marks of 10 students in two examinations. Calculate Spearman's coefficient of rank correlation.

I exam :	40	53	48	82	53	40	92	28	40	32
II exam :	62	74	36	91	74	32	96	46	60	28

7. Compute consumer price index number for the year 2005 with base 2000 by using the following data :

Item	**Price**		**Expenditure of**
	2000	**2005**	**2000**
	Rs.	**Rs.**	**Rs.**
Food	200	280	600
Fuel	40	50	80
Cloth	10	12	40
House rent	50	60	600
Misc.	100	120	400

8. Calculate 5 yearly moving averages for the data given in the following table :

Year :	1	2	3	4	5	6	7	8	9	10	11	12
Value :	110	104	98	105	109	120	115	110	114	122	130	127

SECTION – C

(15×3=45)

(**15** marks **each**)

Answer **any three** :

9. a) Draw a blank table to present the following information regarding the college students.
   a) Faculty : Social science and Commercial science
   b) Class : Under graduate, Post graduate
   c) Sex : Male, Female
   d) Years : 2012, 2013, 2014. **5**

   b) Find the median of the following distribution

Class interval	Frequency
3.0 – 3.9	5
4.0 – 4.9	13
5.0 – 5.9	18
6.0 – 6.9	14
7.0 – 7.9	7
8.0 – 8.9	3

5

   c) A set of 20 values have mean 54. Another set of values have mean 60. If the combined mean is 56, how many values are there in the latter set ? **5**

10. a) The following are the runs scored by two batsmen A and B in 10 innings :

A :	101	27	0	36	82	45	07	13	65	14
B :	97	12	40	96	13	8	85	10	56	15

   i) Who is a better run scorer ?
   ii) Who is more consistent in scoring ? **10**

   b) The five number summary of price of gold (₹ per 10 gms) on a trading day in the market are minimum = ₹ 26,410, maximum ₹ 26,810, Q_1 = ₹ 26,525, Q_3 = ₹ 26,640, M = ₹ 26,560. Draw Box and Whisker plot. **5**

11. a) Calculate Karl Pearson's coefficient of correlation :

	18-20	20-22	22-24	24-26	26-28
20-23	7	6	1	–	–
23-26	3	8	6	4	8
26-29	1	2	3	8	8
29-32	–	1	1	1	2

10

b) In a bivarate data $\Sigma x = 10$, $\Sigma y = 210$, $\Sigma x^2 = 14$, $\Sigma y^2 = 5340$, $\Sigma xy = 180$ and $n = 10$. Estimate the value of x when $y = 15$. 5

12. a) Compute Fisher's index number from the following data :

	Base Year		Current Year	
Commodity	**Price**	**Expenditure**	**Price**	**Expenditure**
A	2	40	5	75
B	4	16	8	40
C	1	10	2	24
D	5	25	10	60

5

b) For the following time series fit a linear trend by the method of least squares. Estimate the sales for the year 2010.

Year :	1992	1994	1996	1998	2000	2002	2004	2006
Value :	103	106	95	93	98	93	90	86

5

c) Solve the following l.p.p graphically

Minimize $z = 5x + 8y$

s.t $12x + 2y \geq 42$

$x + 3y \geq 12$

$x + y \leq 10$

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

5