(i) Printed Pages: 4 Roll No. .....

(ii) Questions : 14 Sub. Code : 0 8 6 8

Exam. Code : 0 0 2 2

Bachelor of Business Administration 2nd Semester

(2053)

BUSINESS STATISTICS

Paper—BBA 122

Time Allowed : Three Hours] **[Maximum Marks : 80**

Note :—Attempt **FOUR** short answer type questions from Section A. Attempt **TWO** questions each from Sections B and C respectively.

SECTION—A

1. Discuss the scope of Statistics. 5

2. The frequency distribution of weight in grams of mangoes of a given variety is given below. Calculate the arithmetic Mean and Median :

Weight in grams	410–419	420–429	430–439	440–449
No. of Mangoes	14	20	42	54

Weight in grams	450–459	460–469	470–479
No. of Mangoes	45	18	7

5

3. What is Skewness ? How is it different from Kurtosis ? 5

4. Calculate Mean Deviation from Median for the following distribution :

Class Interval	50–100	100–150	150–200	200–250
f	7	18	25	31

Class Interval	250–300	300–350
f	15	4

5

5. From the following series of annual data, find the trend line by the method of semi-averages :

Year	2000	2001	2002	2003	2004
Actual Value	170	231	261	267	278

Year	2005	2006	2007	2008
Actual Value	302	299	298	340

5

6. The price index and quantity index of a commodity were 120 and 110 respectively in 2015 with base 2014. Find the value index number in 2015 with 2014 as base. 5

SECTION—B

7. (i) Why standard deviation is the most precise measure of dispersion as compared to other measures ?

(ii) Highlight the important functions of Statistics.

7+8=15

8. (i) Calculate correlation coefficient r(x, y) from the following data :

$n = 10$, $\Sigma x = 140$, $\Sigma y = 150$, $\Sigma(x - 10)^2 = 180$,

$\Sigma(y - 15)^2 = 215$, $\Sigma(x - 10)(y - 15) = 60$

(ii) Differentiate between positive and negative correlation.

10+5=15

9. (i) Calculate the coefficient of variation of the two distributions. Which series is more variable ?

Weight in Kgs :	20–30	30–40	40–50	50–60	60–70	Total
Class A :	7	10	20	18	7	62
Class B :	5	9	21	15	6	56

(ii) Point out the merits and demerits of Mode. 10+5=15

10. A panel of Judges A and B graded 7 debtors the following marks independently :

Debtor :	1	2	3	4	5	6	7
Marks by A :	40	34	28	30	44	38	31
Marks by B :	32	39	26	30	38	34	28

An Eighth debtor was awarded 36 marks by Judge A while Judge B was not present. Had Judge B been present, how many marks are expected to be awarded to Eighth debtor assuming same degree of relationship exists in judgment.

15

SECTION—C

11. (i) Highlight the different methods for measuring trend component in time series.

(ii) Explain the problems in analysis of time series.

10+5=15

12. Fit a linear trend to the following data by the least squares method. Also, estimate the production for the year 2009 :

Year	:	2000	2002	2004	2006	2008
Production (in 000 units)	:	18	21	23	27	16

15

13. Calculate Laspeyre's, Paasche's and Fisher's indices for the following data :

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	6.5	500	10.8	560
B	2.8	124	2.9	148
C	4.7	69	8.2	78
D	10.9	38	13.4	24
E	8.6	49	10.8	27

Also examine which of the above indices satisfy (i) Time reversal test (ii) Factor reversal test. 15

14. Find Bowley's coefficient of skewness from the following data :

Profits (in Rs.)	:	10–20	20–30	30–40	40–50	50–60
No. of Companies	:	15	20	30	10	5

15