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(21213) Roll No. ....

BBA I<sup>st</sup> Sem.

# O-3041

B.B.A. Examination, Dec. 2013

## BUSINESS STATISTICS

(BBA-104)

(Old Course-II)

Time : Three Hours ] [Maximum Marks : 75

**Note :** Attempt any **five** questions. **All** questions carry equal marks.

1. How can Statistics be applied in the fields of Economics and Business Administration?  
What are the limitations of Statistics. 15
2. (a) What points would you consider while designing a questionnaire? 8  
(b) Explain stratified random sampling. How

P.T.O.

does stratified sampling differ from cluster sampling? 7

3 (a) What is the difference between mean, median and mode? Illustrate their use with the help of examples. 7

(b) Anurag's Videotaping Service recently bought 6 cases of High Grade, 4 cases of Performance High Grade and 8 cases of Standard video tapes. If a case of High Grade tapes costs Rs. 1250/-, a case of Performance High Grade tapes Costs Rs.1800/- and a case of Standard tapes costs Rs.1000/-, what is the average cost of a case of tapes to Anurag? 8

4. (a) A three month study of phone calls made by employees of Redlight Company yielded the following data : 8

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| Calls    | No. of Days |
|----------|-------------|
| 100-200  | 3           |
| 200-300  | 7           |
| 300-400  | 10          |
| 400-500  | 13          |
| 500-600  | 27          |
| 600-700  | 10          |
| 700-800  | 9           |
| 800-900  | 8           |
| 900-1000 | 3           |

Compute relative frequencies and draw "more than" and "less than" O gives.

- (b) Ram is confronted with the problem of buying a second hand car. Two equally good cars are available. He decided to choose the car which was most consistent. The cars were tested and gave the following results :

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P.T.O.

|       | Average KMs per litre | Standard Deviation |
|-------|-----------------------|--------------------|
| Car A | 23                    | 7 kms              |
| Car B | 25                    | 3 kms              |

Which car should Ram buy?

5. Calculate Karl Pearson's Coefficient of skewness from the following data : 15

| Size | Frequency |
|------|-----------|
| 1    | 10        |
| 2    | 18        |
| 3    | 30        |
| 4    | 25        |
| 5    | 12        |
| 6    | 3         |
| 7    | 2         |

6. The coefficient of correlation between the ages of husbands and wives in a community was found to be +0.8. The average age of

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husbands was 25 years and that of wives was 22 years. The standard deviations were 4 and 5 years respectively. Find with the help of regression equations : 15

- (a) Expected age of husband when wife's age is 17 years.
- (b) Expected age of wife when husband is 33 years old.

7. (a) Define the coefficient of correlation. What is it intended to measure? How would you interpret the sign and magnitude of a calculated  $r$ ? Consider the particular values of  $r=0$ ,  $r=+1$ ,  $r=-1$ .

7

(b) Calculate the coefficient of concurrent deviation from the following data : 8

| Price | Imports |
|-------|---------|
| 350   | 22      |
| 384   | 21      |
| 370   | 25      |
| 375   | 20      |
| 377   | 25      |
| 340   | 26      |
| 365   | 24      |
| 360   | 29      |
| 375   | 28      |
| 370   | 20      |

8. (a) Calculate the trend value by the method of least squares from the data given below and estimate the sales for the year 2002. 10

| Year  | 1995 | 1996 | 1997 | 1998 | 1999 |
|-------|------|------|------|------|------|
| Sales | 15   | 20   | 22   | 25   | 27   |

(In lakhs of Rs.)

(b) Calculate the standard error of estimate

for the above trend line. 5

9. (a) The quarterly seasonal index of sale of icecream in a particular store is given below :

| Quarter | Seasonal Index |
|---------|----------------|
| Jan-Mar | 85             |
| Mar-Jun | 97             |
| Jul-Sep | 135            |
| Oct-Dec | 83             |

The total sales in the first quarter of the year are worth Rs.10,000/-. If the sales are expected to rise by 5% per quarter, forecast the worth of sales for each of the remaining quarters. 10

- (b) Write a short note on cyclic variation. 5

10. (a) What are the drawbacks of using an unweighted aggregates index? 5

- (b) Calculate Laspeyer's Index for 1993 and

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P.T.O.

1994 using 1990 as the base period: 10

(Price per Kg) Quantity Consumed

1990 1993 1994 1990 1993 1994

|       |   |    |    |    |    |    |
|-------|---|----|----|----|----|----|
| Atta  | 5 | 6  | 8  | 10 | 12 | 15 |
| Sugar | 4 | 7  | 10 | 4  | 6  | 10 |
| Milk  | 8 | 10 | 12 | 2  | 3  | 4  |

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