



KA-2586

**Second Year B. Com. (Honours) (Sem. III) Examination**  
**October / November – 2012**  
**Business Statistics : Paper - III**

Time : 3 Hours]

[Total Marks : 70

**Instructions :**

(1)

नीचे दशांशों में निशानीवाणी विगतो उत्तरवही पर अवश्य लिखनी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
SECOND YEAR B. COM. (HONOURS) (SEM. 3)

Name of the Subject :  
BUSINESS STATISTICS - 3

Subject Code No. : 2 5 8 6 Section No. (1, 2,.....): NIL

Seat No. :  
[ ] [ ] [ ] [ ] [ ] [ ]

Student's Signature

(2) Answer all the questions.

(3) Figures to the right indicate full marks of the question.

- 1 (a) What is data ? What are the measures of dispersion ? 6  
Which is the best measure of central tendency ? Why ?
- (b) Calculate the appropriate measure of dispersion. 8

| Monthly Income Rs. | < 500 | 500-900 | 900-1300 | 1300-1700 | 1700-2100 | > 2100 |
|--------------------|-------|---------|----------|-----------|-----------|--------|
| No. of employee    | 20    | 20      | 45       | 70        | 28        | 17     |

- 2 (a) What is skewness ? Give the definition of central moments. 4
- (b) Obtain the Pearson's coefficient of skewness for the following data. 5

| Class     | 20-25 | 15-20 | 10-15 | 7-10 | 5-7 | 4 | 3 | 2 |
|-----------|-------|-------|-------|------|-----|---|---|---|
| Frequency | 4     | 8     | 10    | 5    | 3   | 3 | 2 | 1 |

- (c) The first four moments about 2 of a frequency distribution are 1, 2.5, 5.5 and 16. Obtain central moments, mean and standard deviation. 5
- 3 (a) What is time series ? What are the components of time series ? Explain Trend. 6

- (b) Fit a second degree parabolic equation by the method of least squares, for the following time series data. 8

|               |      |     |     |     |     |     |     |     |      |
|---------------|------|-----|-----|-----|-----|-----|-----|-----|------|
| Year          | 2002 | '03 | '04 | '05 | '06 | '07 | '08 | '09 | 2010 |
| Profit in Rs. | 4    | 8   | 9   | 12  | 11  | 14  | 16  | 17  | 26   |

- 4 (a) Give the mathematical definition of probability. State the limitations of it. 4

- (b) The probability of winning a race of three horses, X, Y and Z are respectively  $\frac{1}{2}$ ,  $\frac{1}{5}$  and  $\frac{1}{4}$ . Then find the probability that atleast two horses would win the race. 4

- (c) Calculate the seasonal variations for the following data : 6

| Year | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | Q <sub>4</sub> |
|------|----------------|----------------|----------------|----------------|
| 2008 | 68             | 62             | 61             | 63             |
| 2009 | 65             | 58             | 66             | 61             |
| 2010 | 68             | 63             | 63             | 67             |

- 5 (a) Explain the following terms : Mutually exclusive events, Exhaustive events, equally likely events, Baye's theorem. 5

- (b) There are 4 coins in a bag. There are head on both the sides of First coin, the probability of getting tail on second coin is  $\frac{1}{3}$ , third coin is balanced, there are tail on both the sides of fourth coin. One coin is selected at random from the bag, then it is tossed. Then find the probability of getting head on that selected coin. 5

- (c) There are 5 boys and some girls in a group. The probability of selecting 3 boys from it is  $\frac{1}{2}$  then find the number of girls in that group. 4