

Total No. of Questions—5]

[Total No. of Printed Pages—8

Seat No.	
-------------	--

[4967]-2005

B.B.A. (Second Semester) EXAMINATION, 2016

BUSINESS STATISTICS

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

- N.B. :-**
- (i) All questions are compulsory.
 - (ii) Figures to the right indicate full marks.
 - (iii) Statistical table and calculator is allowed.
 - (iv) Notations and abbreviation have their usual meanings.

1. Attempt any *four* of the following : [4×4=16]

- (a) What are the requirements of good measure of central tendency ?
- (b) Calculate standard deviation for the following data :
36, 15, 25, 10, 14.
- (c) Draw the pie diagram to represent the following information :

Item	Monthly Expenditure
Food	200
Clothing	300
Education	150
Saving	90
Mis.	70

P.T.O.

- (d) Average marks of 30 candidates were 40. Later on it was found that a score of 47 misread as 74. Find the correct mean.
- (e) Write the requirements of good sample.
- (f) For a bivariate data, we have :

$$\bar{X} = 53, \bar{Y} = 28$$

$$b_{yx} = -1.5, b_{xy} = -0.2$$

Find :

- (i) r
- (ii) estimate y for $x = 60$.

2. Attempt any *four* of the following : [4×4=16]

- (a) Explain absolute and relative measure of dispersion.
- (b) Explain the scope of Statistics in Industry.
- (c) Calculate median for the following data :

Marks	No. of Students
0—10	1
10—20	3
20—30	10
30—40	4
40—50	2

- (d) The A.M. and S.D. of 20 observations are 20 and 2 respectively. Later on it was noticed that item 8 taken as incorrect. Calculate A.M. and S.D. if :
- (i) the wrong item is omitted
- (ii) the wrong item is replaced by 12.
- (e) Draw the Histogram for the following grouped frequency distribution :

Class	Frequency
0—20	5
20—40	12
40—60	20
60—80	16
80—100	8

- (f) If the correlation coefficient between x and y is 0.67. Find the correlation between :
- (i) x and $-y$
- (ii) $2x$ and $3y$
- (iii) $x-10$ and $y+10$
- (iv) $\frac{x}{2}$ and $\frac{y}{5}$.

3. Attempt any *four* of the following : [4×4=16]

- (a) Explain Stratified Random Sampling.

- (b) Write a note on Regression analysis.
- (c) From the following data find missing frequencies, it is given that mean is 15.38 and total frequency is 55 :

Class	Frequency
9—11	3
11—13	7
13—15	—
15—17	20
17—19	—
19—21	5

- (d) Answer the questions using the following frequency distribution of age of 50 citizens :

Age (years)	No. of Citizens
Below 30	3
31—40	7
41—50	10
51—60	16
61—70	8
Above 71	2

- (i) State the type of classification

- (ii) State open end class
- (iii) State the modal class
- (iv) State the class boundaries of 3rd class.
- (e) The mean and S.D. of 10 observations were 9.5 and 2.5 respectively. If one more observation with value 15 is included in the group, obtain the mean and S.D. of these 11 observations.
- (f) Calculate price index for 2006 with 2007 as a base year using simple average of price relative method, for the data given below :

Commodities	Prices in 2006	Prices in 2007
A	40	50
B	60	60
C	20	30
D	50	64
E	80	104

4. Attempt any *four* of the following : [4×4=16]
- (a) What is classification ? Explain inclusive and exclusive classification.
- (b) State the properties of regression coefficients.

- (c) Calculate price index number by using Laspeyres, Paasches and Fisher Method.

Commodity	2006		2012	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	10
D	20	20	20	15

- (d) Estimate the trend by using 3 yearly moving averages for the following data :

Year (<i>t</i>)	Sales in 000'
2000	242
2001	238
2002	252
2003	257
2004	250
2005	273
2006	270
2007	268
2008	288
2009	284

- (e) For the data given below, state which batsman is more consistent :

Batsman	Sachine	Rahul
Mean	86	105
S.D.	8	15

- (f) What are the uses of Index Number ?

5. Attempt any *two* of the following : [2×8=16]

- (a) What is Time Series ? Explain the different components of a Time Series with illustration.
- (b) The below gives the respective heights of father and son :

Height of Father (X)	Height of Son (X)
65	68
63	66
67	68
64	65
68	69
62	66
70	68
66	65
68	71
67	67

Estimate fathers height of sons height is 60 inches.

(c) The following data represents the goals scored by two teams in football matches :

No. of goals scored	No. of Matches by Team A	No. of Matches by Team B
0	20	18
1	12	10
2	8	7
3	3	6
4	2	4

Which team is more consistent ?