

Code No: 741AD

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MBA I Semester Examinations, January-2018****BUSINESS STATISTICS****Time: 3hours****Max.Marks:75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****5 × 5 Marks = 25**

- 1.a) Explain the various functions of Statistics. [5]  
 b) Find the mode for the following data: [5]  
 Profits per shop (in thousands) : 0-10 10-20 20-30 30-40 40-50 50-60  
 No.of shops : 10 16 29 22 15 8  
 c) How to classify different types of data. [5]  
 d) How regression analysis can be used in forecasting? [5]  
 e) Explain the uses of time series analysis. [5]

**PART - B****5 × 10 Marks = 50**

2. Explain the relationship of statistics with other subject. [10]  
**OR**  
 3. Explain Mean, Median and Mode. [10]  
 4. Calculate the mean deviation and its coefficient of the two income groups of five and seven members given below. [10]  
 I (Rs.) : 4,000 4,200 4,400 4,600 4,800  
 II (Rs.): 3,000 4,000 4,200 4,400 4,600 4,800 5,800  
**OR**  
 5. Find the Bowley's coefficient of skewness for the following frequency distribution: [10]  
 No.of children per family: 0 1 2 3 4 5 6  
 No.of families : 5 12 16 27 20 9 7  
 6. Draw a multiple diagram from the following data: [10]  

Year	Sales ('000 Rs.)	Gross Profit ('000 Rs.)	Net Profit ('000 Rs.)
2005	110	50	20
2006	145	55	40
2007	140	55	35
2008	150	60	40

**OR**

7. A high school asked its employees to estimate the how much time per week they required their students to use the Internet for instructional purposes. The following chart shows the times estimated by each teacher and then divided into two groups by the gender of the teacher. Estimated Time in minutes per week [10]

Female	Male
15	5
75	15
5	10
60	80
20	10
40	0
30	10
15	10
45	15
40	20
20	10
35	20
15	15
80	10
10	0
10	0
45	15
25	5
10	10

Use the appropriate t – test to test the significance difference

8. To study the performance of three detergents and these three different water temperatures, the following ‘Whiteness’ readings were obtained with specially designed equipment:

Water Temp.	Detergent A	Detergent B	Detergent C
Cold Water	57	55	67
Warm Water	49	52	68
Hot Water	54	46	58

Perform a two-way analysis of variance, using 5% level of significance? [10]

**OR**

9. The following data relate to age of employees and the number of days they were reported sick in a month.

Age	:	30	32	35	40	48	50	52	55	57	61
Sick days:		1	0	2	5	2	4	6	5	7	8

Find the Karl Pearson coefficient of Correlation.

[10]

10. Below are given the figures of production (in thousand quintals) of a sugar factory:

Year	: 2009	2010	2011	2012	2013	2014	2015
Production (in'000 qtls)	: 80	90	92	83	94	99	92

a) Fit a straight line trend to these figures

b) Plot these figures on a graph and show the trend line

[10]

**OR**

11. The following table gives the aptitude test scores and Productivity indices of 10 workers selected at random:

Aptitude Scores (X)	: 6	6	6	7	7	2	4	5	7	6	8
Productivity Index (Y)	: 6	6	6	8	8	4	5	6	6	6	8

Calculate the two regression equations.

[10]

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