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Question Paper Code: CMB005

Jawaharlal Nehru Technological University Hyderabad

MBA I Semester End Examinations (Supplementary) - May, 2018

Regulation: .–R16

STATISTICS FOR MANAGEMENT

Time: 3 Hours (MBA) Max Marks: 70

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) What are the functions of statistics? Discuss briefly. [7M]
   (b) Why it is necessary to learn statistics? [7M]
2. (a) Statistician at times misuses statistics. Elucidate this statement. [7M]
   (b) Discuss important applications of statistics with special reference to decision making in modern business and industry. Also briefly describe its limitations. [7M]

UNIT – II

3. (a) The net profits earned by 140 companies for one year are shown in Table 1. Calculate geometric mean and harmonic mean. [7M]

Table 1

Net profit (Rs. in Lakhs)	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Number of companies	5	16	23	36	25	19	14	2

   (b) Calculate the quartile deviation from the data shown in Table 2. [7M]

Table 2

Class Interval	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	4	6	8	12	9	7	4

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4. (a) Calculate the Pearson's measure of skewness on the basis of mode and standard deviation for data shown in Table 3. [7M]

Table 3

Class Interval	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22
Frequency	35	40	48	100	125	87	43	22

(b) From the data given in the Table 4, find out which of the two series is more consistent. [7M]

Table 4

Class Interval	10-20	20-30	30-40	40-50	50-60	60-70
Series-A	10	16	34	38	24	18
Series-B	18	22	38	34	20	8

UNIT - III

5. (a) What is meant by classification? State its important objectives. [7M]

(b) The data shown in Table 5 relate to monthly income and expenditure under different heads for two families. Show the data by percentage bar diagram and multiple bar diagram. [7M]

Table 5

Item of Expenditure	Monthly Income	
	Family A	Family B
Food	4000	4800
Clothing	2500	3000
Rent	3000	4000
Education	1500	2500
Fuel and lighting	400	800
Others	600	900

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6. (a) Explain the importance and limitations of graphs and diagrams. [7M]

   (b) Table 6 shows the marks secured by 100 students. Draw histogram and locate mode graphically. [7M]

Table 6

Marks	Number of students
0-20	10
20-40	22
40-60	35
60-80	28
80-100	5

UNIT – IV

7. (a) Define ANOVA. Explain the step wise procedure for one way ANOVA. [7M]

   (b) Realtors are often interested in seeing how the appraised value (in thousands of dollars) of home varies according to the size (in thousands of square feet) of the home. Find the correlation between them from Table 7. [7M]

Table 7

Area	1.1	1.5	1.6	1.4	1.3	1.1	1.7	1.9	1.5	1.3
Value	75	95	95	87	82	98	90	94	87	96

8. (a) The average commission charged by full service brokerage firm on a sale of common stock is $144 and standard deviation is $52. Joel Freelander has taken a random sample of 121 trades by his clients and determined that they paid an average commission of $151. At 0.01 significance level, can Joel conclude that his client's commissions are higher than the industry average? [7M]

   (b) Three training methods were compared to see whether they led to greater productivity after training. The following data in Table 8 are productivity measures for individuals trained by each method [7M]

Table 8

Method 1	45	40	50	39	53	44
Method 2	59	43	47	51	39	49
Method 3	41	37	43	40	52	37

At 0.05 level of significance, do the three training methods lead to different levels of productivity?

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UNIT – V

9. (a) State the difference between correlation and regression. [7M]

(b) In economics the demand function for a product is often estimated by regressing the quantity sold (Q) on the price (P). The company is trying to estimate the demand function for its new doll and has collected the following data shown in Table 9. [7M]

Table 9

P	20.0	17.5	16.0	14.0	12.5	10.0	8.0	6.5
Q	125	156	183	190	212	238	250	276

10. (a) What are the components of time series? [7M]

(b) A national shopping survey was conducted to study the average weekly buying habits of a typical family in 1992, and 1996. The data collected is shown in Table 10. [7M]

Table 10

	1992		1996	
Items	Unit price ($)	Quantity	Unit price ($)	Quantity
Cheese (8 oz)	1.19	2	2.09	1
Bread (1 loaf)	0.79	3	1.09	3
Eggs (1 dozen)	0.84	2	1.35	1
Milk (1 gallon)	1.36	2	2.39	2

Calculate the

i. Laspeyers
ii. Paasche
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