MASTER OF BUSINESS ADMINISTRATION RETAIL SERVICES (MBARS)

Term-End Examination

June, 2014

MRS-011 : QUANTITATIVE TECHNIQUES

Time : 3 hours　　　　　　　　*Maximum Marks : 100*

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

1.　(a)　Explain various stages in statistical investigation and what are the limitations of statistics ?　　**10**

　　(b)　What are grouped and ungrouped frequency distribution ? Also explain the method of constructing histogram.　　**10**

2.　(a)　Find Mean, Median and Mode from the following distribution :　　**10**

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	6	10	16	14	10	5	2

　　(b)　Distinguish between the following :　　**10**
　　　　(i)　Geometric and Harmonic Mean
　　　　(ii)　Quartiles and Deciles

3.　(a)　Define Karl Pearson Correlation Coefficient. Show that the Karl Pearson Correlation Coefficient lies between -1 and $+1$.　　**10**

(b) Find the equation of regression in its simplest form of the following age of Husbands and Wifes at Marriage : **10**

Husband's age	23	27	28	28	29	30	31	33	35	36
Wife's age		18	20	22	27	21	29	27	29	28	29

4. (a) Explain different types and uses of Index numbers. **10**

(b) Write short notes on : **10**

(i) Seasonal Variations

(ii) Cyclical Variations

5. (a) A speaks truth in 60% and B in 75% of the cases. In what percentage of cases are they likely to contradict each other narrating the same incident ? **10**

(b) A coin was tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is unbiased. **10**

6. (a) Two type of batteries A and B are tested for their length of life and following results are obtained : **10**

No. of samples		Mean	Variance
A	10	500 Hours	100
B	10	560 Hours	121

Is their a significant difference in the two means ? The value of t for 18 degree of freedom at 5% level of significance is 2.1.

(b) Write the parameter of the following distributions : **10**

(i) t distribution

(ii) X^2 distribution

7. (a) What is major purpose of hypothesis   **10**
         testing ? Explain the various steps involved
         in hypothesis testing.

    (b) Distinguish between :   **10**

         (i)   Point estimate and Interval estimate

         (ii) Parameter and Statistic

         (iii) Sample and Population

8. (a) What is analysis of variance ? Discuss **10**
         various steps involved in the analysis of
         variance in two way classification.

    (b) Write a short note on Kruskal - Wallis test **10**
         and Kolmogorov Smirnov test.

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