

**GC University, Lahore**  
**Department of Statistics**  
**SAMPLE MPhil Admission Test 2010**

**Maximum Marks: 60**

**Pass Marks: 30**

**Time Allowed: 2 Hours**

**Section-I** **OBJECTIVE** **Marks: 20**

1. The 75th Percentile of the Exponential Distribution with variance 2.5 is:

3.645	3.465	3.665	3.565	3.555
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2. The correlation between group of variables is called:

Partial Correlation	Part Correlation	Canonical Correlation	Bi-partial Correlation	Rank Correlation
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3. An estimator that has smallest variance in the class of all unbiased estimators is:

Efficient	Sufficient	Consistent	UMVUE	MBE
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4. The class of all events associated with a given experiment is define to be the:

Event space	Probability Mass	Sample space	Experiment	Domain
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5. When Multicollinearity is present estimates of parameters tends to have standard errors:

Large	Small	Infinite	Zero	Significant
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**Section-II** **SUBJECTIVE** **Marks: 40**

Attempt any **FOUR** questions in a sequenced and very clear way.

Q#1 What is multicollinearity? How \_it can be observed? How does it affect the estimates? What is remedy for it?

Q#2 Describe relationship between  $t$ ,  $\chi^2$  and  $F$  distributions.

Q#3a What is partial auto-correlation function? How it is used?

Q#3b It is assumed that noise is white. If this assumption is not true, what happens? What is the remedy for it?

Q#4 Define the following in such a way that their importance becomes clear:

- P-Value
- Deep Stratification
- Stereogram
- Probable errors