Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

**Note:** First question is compulsory. Attempt two questions from each section A and B.

1. Write notes on
   i. Difference between Parametric tests and Non Parametric tests.
   ii. Scaling Meaning.
   iii. Multiple regression.
   iv. Stratified sampling.

**SECTION – A**

2. Explain the meaning of the following in the context of Research Design.
   a) Extraneous variables.
   b) Confounded relationship
   c) Research hypothesis.
   d) Experimental and control groups.

3. Explain the important scaling techniques used in the context of research in the context of social or business research.

4(a) What point will you keep in mind while preparing a research report? Explain.

(b) What are the different forms in which a research work may be reported? Describe.

**SECTION – B**

5. For a set of 10 pairs of values of X and Y, the regression line of X and Y is X - 2Y + 12 =0; mean and standard deviation of Y being 8 and 2 respectively. Later it is known that a pair (x=3, y=8) was wrongly recorded and the correct pair detected is (x=8, y=3). Find the correct regression line of X on Y.

6. Two sections of elementary course consisting of 5 and 7 student’s respectively in economics were taught by the teachers. The marks obtained on the final test were as under:

<table>
<thead>
<tr>
<th>Marks</th>
<th>Teacher I</th>
<th>Teacher II</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>63</td>
<td></td>
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<tr>
<td>60</td>
<td>58</td>
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<tr>
<td>65</td>
<td>70</td>
<td></td>
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<tr>
<td>70</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

Using the Kruskal – Wallis test, verify at $\alpha = .05$ level the null hypothesis that the distribution of marks awarded by the two teachers are equal.

Given: Value of $\chi^2$ with d.f = 1 is 3.84

Given: Value of $\chi^2$ with d.f = 2 is 4.13

7. At a certain data in a large city 400 out of a random sample of 500 men were found to be smokers. After the tax on tobacco had been heavily increased, another random sample of 600 men in the same city included 400 smokers. Was the observed decrease in the proportion of smokers significant?

Test at 5% level of significance.

Given: for $\alpha = 5\%$

For one tailed test t value is 1.645

For two tailed test t value is 5.321.