THE TEXTILE ASSOCIATION (INDIA)
GMTA REVISED EXAMINATION - 2014
SECTION - C, PAPER - C4
APPLIED STATISTICS

Date 27.12.2014 MARKS: 100 Time 10.00 AM to 1.00 PM

Instructions:
1. Answer any six questions out of which Question No 1 is compulsory.
2. Answer each next main question on a new page.
3. Figure to the right indicate full marks.
4. Illustrate your answers with sketches and flow chart wherever necessary.
5. Use of non-programmable electronic pocket calculator permitted.
6. Mobile and any other communication electronic devices are not allowed in examination hall.
7. Assume suitable data wherever necessary.
8. Question No 2 to 8 a & b carries equal marks of 08 each.

Q1 Write Short Notes on any five of the following
   a. Concepts and importance of statistics in process control.
   b. Discrete and Continuous variables.
   c. Coefficient of Variation and its impact on yarn quality.
   d. Properties of Poisson distribution.
   e. Population and Sample.
   f. Test of Hypothesis.
   g. Simple nonparametric tests.
   h. Correlation coefficient.

Q2
   a. Explain the concept of two variables and curve fitting.
   b. What is line of regression? How it is calculated?

Q3
   a. What is Null Hypothesis? Explain with an example.
   b. What is Hypothesis concerning one and two variances? Explain with an example.

Q4
   a. Differentiate Percentage Mean Deviation and Standard Deviation?
   b. How do you construct a control chart considering Normal distribution? Explain with an example.

Q5
   a. What is test of significance? Give an example of its usage in Textile mill.
   b. The test reports of two bags of cotton yarn are as follows. Whether they are identical or different?

<table>
<thead>
<tr>
<th></th>
<th>Bag - 1</th>
<th>Bag - 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count Ne</td>
<td>30.25</td>
<td>28.98</td>
</tr>
<tr>
<td>Number of cones tested</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Count CV%</td>
<td>1.10</td>
<td>1.7</td>
</tr>
<tr>
<td>TPM</td>
<td>890</td>
<td>870</td>
</tr>
<tr>
<td>TPM CV%</td>
<td>3.6</td>
<td>3.1</td>
</tr>
<tr>
<td>RKM</td>
<td>17.2</td>
<td>16.0</td>
</tr>
<tr>
<td>Tensile CV%</td>
<td>6.2</td>
<td>8.0</td>
</tr>
<tr>
<td>U%</td>
<td>11.8</td>
<td>12.6</td>
</tr>
<tr>
<td>Imperfections</td>
<td>560</td>
<td>600</td>
</tr>
</tbody>
</table>
Q6  a. Explain boy’s theorem. Give an example.
    b. What is Weak law of Large Numbers?

Q7  a. What is the difference between Sample Mean, Population Mean and
    Arithmetic Mean of all sample tests?
    b. What is expected value of a random variable? Explain with an
    example.

Q8  a. How do you decide whether a lot is to be accepted or rejected when
    the test readings are within control but at the border line?
    b. What are the normal statistical tools used in a Textile Mill?

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