Quality Control

Time: 3 Hours
[Total Marks: 100]

Note: (1) Attempt any five questions.
(2) Use of statistical table is allowed.

1. Answer any two parts: 10×2=20
   (a) Discuss the importance of quality control in the success of an organization.
   (b) What is non-destructive testing? Describe different methods for non-destructive testing and their applications.
   (c) Describe the different type of gauges with their applications.

2. Answer any two parts: 10×2=20
   (a) The following data relates to the daily output of a foundry producing small castings. The sample size is 150.

<table>
<thead>
<tr>
<th>Day</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defectives in sample</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

V-4067] 1
[Contd...
Draw up a control chart for fraction defective. What number of defectives could be expected to occur once in 40 samples?

(b) Discuss the control charts for attributes.

(c) What do you mean by process capability? Briefly explain the objectives of an analysis of process capability.

3 Answer any two parts: 10×2=20
Write notes on any two:
(a) Acceptance sampling
(b) Producer’s and consumer’s risk
(c) Double sampling plan.

4 Answer any two parts: 10×2=20
(a) Explain the bath - tub curve and emphasize its importance
(b) What are the different diagnostic techniques for defects? How are they important in ascertaining good quality?
(c) Define value engineering? What are the different techniques of value engineering?

5 Attempt any two parts: 10×2=20
(a) What are quality circles? Discuss their importance in improving the quality in an organization.
(b) How accuracy can be improved in a manufacturing organization?
(c) What do you understand by zero defect? Discuss its importance in manufacturing.