Hindi Vidya Prachar Samiti's
Ramniranjan Jhunjhunwala College of Arts, Science and Commerce(Autonomous)

Program : MSc Statistics-II **Sem : IV**

Practical-2 Statistical Quality Control – II

(Control Chart on Attributes)

Q.1 Each day a sample of 50 items from a production process was examined. The number of defectives found in each sample was as follows:

6	2	5	1	2	2	3	5	3	4	5	4	12	4	4	1	3	5	4	1	4	3	2	3

Draw a suitable control chart and check for control. What control limits would you suggest for future use?

Q.2 The following are the figures of defectives in 20 lots each containing 2000 rubber belts:

430	216	341	225	322	280	306	337	305	356
216	264	126	409	193	326	280	389	451	420

Draw a control chart for fraction defective and comment on whether the process is in control or not.

Q.3 The number of defects in 20 pieces of cloths, each of 100 meters lengths is given below:

1	3	3	1	6	4	3	7	10	2	6	4	3	2	7	1	5	6	4	2

Draw the appropriate chart and say whether the process can be considered to be in control.

Q.4 The following number were found on articles being produced, when inspected 8 times a day on 3 days:

2	4	7	3	1	4	8	9	5	3	7	11	6	4	9	9	6	4	3	9	7	4	7	12

Draw a control chart and comment on your findings. Suggest the value of 'number of defects' to be used in future.

Q.5 Draw a suitable control chart for following data pertaining to the number of coloured threads (considered as defects) in 15 pieces of a cloth of certain make of synthetic fiber and state your conclusion:

7	12	3	20	21	5	4	3	10	8	0	9	6	7	20

Q.6 Using the **orangejuice** dataset in R, create a control chart for attributes to monitor the quality of juice samples. Analyze the chart for both the trial and further samples, identifying any points that are out of control. Provide an explanation for any out-of-control points observed in the context of the dataset.

Q.7 Samples of 100 tubes are drawn randomly from the output of a process that producesseveral thousand units daily. The result of 15 samples is shown below:

Sample No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of defective tubes	8	10	13	9	8	10	14	6	10	13	18	15	12	14	9

On the basis of the information given above, find the limits for

(a) Fraction defective chart

(b) Chart for number of defectives.

Also draw a control chart for (a). What conclusion can you draw from the chart?