LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

SIXTH SEMESTER – APRIL 2017

ST 6605- STATISTICAL PROCESS CONTROL

Date: 20-04-2017   Dept. No.   Max. : 100 Marks
01:00-04:00

Part – A

Answer **ALL** questions: **(10*2=20 Marks)**

1. Write the need for statistical process control?
2. Define quality planning.
3. When do we use CUSUM chart?
4. State the difference between control charts and acceptance sampling plans.
5. What is meant by product control?
6. List out the control charts for attributes.
7. Why do we need process capability analysis?
8. Give the difference between mean and range chart.
9. List out the control chart for variates.
10. What is rectifying inspection?

Part – B

Answer any **FIVE** questions: **(5*8=40 Marks)**

11. Explain statistical methods for quality improvement.
12. Discuss the major applications of statistical process control.
13. Explain the construction of pp plot with an example.
14. Explain Shewharts control charts.
15. Write short notes on CUSUM control chart.
16. Explain single sampling inspection plan in detail.
17. What is acceptance sampling? Mention the situations where it is most likely to be useful.
18. Explain the operating procedure for Sequential sampling plan

Part – C

Answer any **TWO** questions: **(2*20=40 Marks)**

19. (a) How do we construct the $\bar{X}-chart$ and explain its uses..
    (b) List out the benefits of statistical quality control.
20. Construct Histogram and stem and leaf plot for the data given below:

127	125	131	124	129	121	142	151	160	125
124	123	120	119	128	133	137	124	142	123
121	136	140	137	125	124	128	129	130	122
118	131	125	133	141	125	140	131	129	126

21. Describe the procedure for the construction of p and np charts with an example.

22. Explain the concepts of double sampling plans and discuss the ASN and OC curve of the plan and state its uses.

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