SPC 03

Diploma in Statistical Process Control and Operations Research (DSPCOR) Examination, August 2009
STATISTICAL PROCESS CONTROL

Time : 3 Hours

Max. Marks : 90

SECTION – I

Answer **any 2** questions and **each** question carries **15** marks.

1. Explain the quality function of a firm.

2. Explain the rules involved in the interpretation of patterns on the control chart.

3. a) What are defects ? Explain through sample.

   b) What chart you specify for defects and describe the steps in construction of the chart where process standards are known ?

4. Explain the different types of sampling plans and the rules involved in the formation of lot.

SECTION – II

Answer **any 4** questions and **each** question carries **10** marks :

5. a) What is process variability and define chance and assignable causes of process variability ?

   b) What is cause and effect diagram ?

6. Explain the two types of quality characteristics used in the construction of control charts.

P.T.O.

7. Set up $\overline{X}$ and R charts and write your comments :

Sample No.	X_1	X_2	X_3	X_4	X_5
1	16	23	12	11	16
2	11	13	14	17	14
3	13	17	13	13	14
4	16	22	16	17	17
5	10	9	18	14	13
6	15	10	17	10	09
7	16	10	14	10	18
8	10	10	18	17	13
9	12	12	11	18	13
10	16	14	16	15	15

8. What chart you specify for control chart for defectives and write the control limit for :

 i) Process standards are known.

 ii) Process standards are not known.

9. The number of nonconforming door hings found in 15 samples of size 300 are shown in the following table :

Sample No. :	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Non conforming door hings (d) :	10	14	12	16	11	14	8	9	7	15	10	16	12	7	20

Obtain the np-chart.

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10. Explain the acceptance inspection.

11. Define and draw the graph for ATI and AOQ and specify AOQL.

12. Define DSP for attributes and steps involved it.

SECTION – III

Answer **any 4** questions and **each** question carries **5** marks.

13. What is TQM ?

14. Explain the Pareto chart with an example.

15. What are the advantages of constructing a control chart ?

16. Explain the rational subgroups.

17. What is a statistic ? Explain its role in the construction of a control chart.

18. What is U-chart and write the control limits for it.

19. Explain OC curves.

20. What are ATI and AOQ ?

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