Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI- EXAMINATION – SUMMER 2016

Subject Code: 162901 **Date: 19/05/2016**

Subject Name: Statistical Quality Control & Textile Costing

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Explain in detail about different types of frequency distribution curves. **07**

(b) Write in detail about Normal distribution & Binomial distribution. **07**

Q.2 **(a)** From the following Textile thread strength values, find out (i) Mean Deviation (ii) Percentage Mean Deviation (iii) Variance (iv) Standard Deviation (v) C.V.% **07**

No.	1	2	3	4	5	6	7	8	9	10
Values	27	22	24	29	31	21	23	20	32	21

(b) Discuss in detail about Control charts alongwith significance and types of control charts. **07**

OR

(b) Four observations are taken daily, for ten days from a production process. Using following observations, find out UCL & LCL values for X-bar and R charts. **07**

(A_2 = 0.729, D_3 = 0, D_4 = 2.282)

Days	Observations			
1	20	30	28	22
2	26	29	23	24
3	24	28	25	27
4	26	27	22	26
5	30	23	25	26
6	28	31	29	26
7	27	25	25	26
8	29	25	44	27
9	26	25	25	24
10	21	23	20	21

Q.3 **(a)** What is Sampling? Explain different sampling methods in detail. **07**

(b) Define – "Cost". Also explain in detail about types of cost. **07**

OR

Q.3 **(a)** Explain Break even analysis with suitable diagram. **07**

(b) What are overheads? Discuss various types of overheads briefly. **07**

Q.4 **(a)** What is regression? Give basic idea about regression lines and regression co-efficient. **07**

(b) Define – Correlation. State types and methods of correlation. Also explain any one method of studying correlation in detail. **07**

OR

Q.4 **(a)** With Karl pearson's method of correlation, find out 'r' & put your comments related to type of correlation from the following data : **07**

Length	Weight
6	18
8	22
12	28
14	30
20	32

(b) Conduct the analysis of variance (one way classification) for the following data. State whether the lea count differ between the bobbins. **07**

Lea No.	Bobbin No.					
	1	2	3	4	5	6
1	22	23	24	21	20	19
2	21	20	22	23	24	19
3	20	19	21	20	22	23
4	18	24	20	19	22	24

Table value of F for 5, 18 d.f. at 5% level=2.77 & 1% level=4.25

Q.5 **(a)** What is the aim of Design of experiments? Also write in detail about Randomization & Replication. **07**

(b) Explain Material cost of Textile mill in detail. **07**

OR

Q.5 **(a)** Discuss labour cost with elements of labour cost and classification of labour cost. **07**

(b) A spinning mill is working with following mix : **07**

Cotton Variety	Proportion (%)	Cost/kg. (in Rs.)
P1	10	4
P2	20	5
P3	30	6
P4	40	7

Calculate clean cotton cost/kg. if yarn realization is 75% & that out of the 25 kg. lost per 100 kg. put through, 8 kg. are saleable at 2.50 Rs./kg.

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