Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 162501 **Date: 27/10/2016**

Subject Name: Statistical Methods and Quality Control

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)** Discuss various data presentation devices. **07**

(b) What is cumulative frequency curve? Explain "less than" and "more than" cumulative frequency curve. **07**

Q.2 **(a)** Discuss various mean with suitable example. **07**

(b) Find median for the following data set. **07**

Gross profit (in % of Sales	0-10	10-20	20-30	30-40	40-50
No. of Companies	22	38	46	35	20

OR

(b) Calculate the mode for the following data **07**

Class	0-7	7-14	14-21	21-28	28-35	35-42	42-49
Frequency	19	25	36	72	51	43	28

Q.3 **(a)** Explain various measures of dispersion. **07**

(b) Calculate variance for following data. **07**

Profit	10	15	20	25	30
No. of Companies	15	10	15	6	4

OR

Q.3 **(a)** Discuss moments as a measure of statistical properties. **07**

(b) Calculate coefficient of skewness for the following data. **07**

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	15	17	19	27	19	12

Q.4 **(a)** Explain Baye's theorem in detail. **07**

(b) When a machine is set correctly, it produces 25% defectives; otherwise it produces 60% defectives. From the past knowledge and experience, the manufacturer knows that the chances that the machine is set correctly or wrongly are 50:50. The machine was set and before commencement of production, one piece was inspected and found to be defective. What is the probability of machine set-up being correct? **07**

OR

Q.4 **(a)** Discuss various approaches to assigning probability. **07**

(b) In a competitive examination, 30 candidates are to be selected. In all 600 candidates appear in a written test, and 100 students will be called for interview. What is the probability that a person will be called for interview? Determine the probability of a person getting selected, if he has been called for interview. **07**

Q.5 **(a)** Discuss f-test with suitable example. **07**

(b) Discuss t-test with suitable example. **07**

OR

Q.5 **(a)** Discuss ANOVA with suitable example. **07**

(b) Explain X-bar and R chart with suitable example. **07**

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