Seat No.:	Enrolment No.
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Subject Code: 182003

Subject Name: Quality Assurance and Reliability

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER - VIII.EXAMINATION - WINTER 2016

Date: 21/10/2016

Time: 02:30 PM to 05:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. 0.1 Explain Deming's 14 point philosophy of TQM 07 Explain quality of design and quality of conformance, with suitable examples. **07 (b) Q.2** In a manufacturing process the number of defectives found in the inspection of 07 (a) 20 lots of 100 samples is as under: Lot No. No. of defectives Lot No. No. of defectives 1 5 11 7 2 4 12 6 3 3 13 3 4 5 14 5 5 15 4 4 2 6 16 6 7 9 17 8 8 15 7 18 9 19 11 6 10 6 20 4 1. Draw a suitable control chart and state whether the process is under control or not? 2. Determine the control limits for future production. In the context of ISO 9001 Certification discuss the following clauses: 07 **(b)** 1. Document & data control 2. Contract review OR In the context of ISO 9001 Certification discuss the following: 07 **(b)** 1. Compliance Audit 2. Surveillance Audit **Q.3** Answer the following: 07 (a) 1. Differentiate between variable & attribute type of data with appropriate examples. 2. Describe the concept of variation in the context of manufacturing. Explain cost of prevention and cost of appraisal in detail with the help of 07 **(b)** relevant examples. OR 0.3 Explain quality control in detail. 07 (a) Answer the following: **(b)** 07 1. 'Quality is a relative term.' - Evaluate. 2. 'Sampling is not a full proof exercise.' - Evaluate.

Q.4	(a)	Explain the following:	07	
		1. Six sigma approach of quality management		
		2. Reliability		
	(b)	Explain various types of redundancy.	07	
		OR		
Q.4	(a)	Calculate the reliability of the system.	07	
		0.83 0.88 0.88 0.75 0.76		
	(b)	Explain the constant hazard model in detail and derive the expressions for reliability, failure density and probability of failure for this model.	07	
Q.5	(a)	What is cause & effect diagram? Describe the procedure of drawing the diagram with a suitable example.	07	
	(b)	Explain the random phenomena and random event.	07	
	` /	OR		
Q.5	(a)	Explain the formation of Quality circle and its significance.	07	
£	(b)	Explain the baye's theorem with an appropriate example.	07	
	()	Emplain the days of theorem with an appropriate example.		
