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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII • EXAMINATION – SUMMER • 2015

Subject code: 171504Date: 06/05/2015Subject Name: Industrial statistics & Quality ManagementTime: 02.30pm-05.00pmTotal Marks: 70Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- Q.1 (a) Define an INDUSTRIAL statistics. Discuss the application of 07 statistics in quality control and management.
 - (b) "Dispersion is as important as the central tendency" Explain. 07 List out the measures of dispersion and also explain the main reasons of studying them with examples.
- Q.2 (a) The profits earned by 50 top companies in India during 2011 07 are given below:

Find (a)the value of mean, median and mode the frequency distribution and confirm whether the distribution is very nearly symmetrical or not? (b) Calculate Q1 and interpret the results.

Profits(in	4	9	13	18	22	31	32	41
billions)								
No. of	2	6	12	22	42	54	74	45
companies								

- (b) Distinguish between :
 - (a) A pie chart & a histogram, (b) a frequency polygon & a frequency curve.

OR

- (b) What are the criteria's of a good measure of central tendency? 07 Compare the mean, median and mode in the light of these criteria with suitable example.
- Q.3 (a) What is Skewness ? State its applications with suitable 07 example.
 - (b) In M/S JNG (p) limited, GHANDHIDHAM, the manufactures 07 of vitrified tiles, probability that the tiles will be defective is 1/12. If tiles are manufactured in the lot of 1000, find the Probability that (a) AT LEAST ONE tiles will be defective, (b) Exactly TWO tiles will be defective, (c)None will be NON defective?

Q.3 (a) "Quality NEEDS PASION AND A LOT OF COMBINED 07 EFFORT"- Criticize the statement.

- (b) Write note: Quality circle-its importance and scope of 07 application.
- Q.4 (a) Discuss how quality helps to improve the overall productivity 07 of any organization.
 - (b) What is the application of control charts in any organization? 07 The no. of defectives of vitrified tiles in M/S LEC limited, MORROCO is given below. Draw the control chart(assume the constant to calculate control limits):

Lot no.	12	46	64	20	105	134	550	567	544
No. of	3	4	5		2	5	3	2	1
defectives OR									

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- **Q.4** (a) Write short note: TQM and ISO 9000.
- Q.4 (b) What are the important criteria for selection of samplings 07 plan for any industry? Explain double sampling plan.
- Q.5 (a) Write short note: OC curve and its application. 07
 - (b) What is the process capability? Discuss its importance with its 07 various indexes (cp and cpk)

OR

- Q.5 (a) Differentiate between sequencial sampling plan and double 07 sampling plan.
 - (b) Write short note: Seven tools of SQC for quality 07 management in industries.
