

SUPPLEMENTARY TUTORIAL 01

IT 1070 (June Intake)

- 1) A sample of 25 plastic hinges was subjected to repeated stress cycles until failure. The number of cycles which each survived is given below.

72	35	63	107	87	71	64	47	60	101	39	112	57
74	43	55	37	83	48	91	113	44	94	65	75	

- a) Produce a stem-and-leaf plot of these measurements.
 - b) Find the three quartiles for this data.
 - c) Calculate, to 2 decimal places, the mean and standard deviation for this data.
 - d) Comment on the distribution of this data.
 - e) Construct 95% confidence interval for the true mean number of stress cycles plastic hinges could survive.
- 2) Explain what is meant by;
- i. Mutually exclusive events
 - ii. Sample space
 - iii. Collectively exhaustive events.
 - iv. Independent events.
- 3) What is meant by conditional probability of A given B?
- 4) A businessman, who sells toys buys toys from three suppliers. Supplier A supplies 40% of all toys and has a 2% defective rate. Supplier B supplies 25% of all toys and has a 1% defective rate. Supplier C supplies the remaining 35% of toys and has a 3% defective rate.
- a) What is the probability that a randomly selected purchased toy is defective?
 - b) Given that a purchased toy is defective, what is the probability it came from Supplier A?
- 5) The followings are turnover in Rs. '000, of 12 outlets of a chain of distribution company during the year 2016.

300	180	285	170	310	490	260	155	360	160	150	240
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- a) List the five-number summary.
- b) What are the outliers in the above dataset, if any?
- c) Construct a Box-and-whisker plot.
- d) Find the mean and standard deviation.
- f) Considering the results above, how do you describe the shape of the distribution of data?