# Weekly Test 2 – Unit 2 – Solutions

Answer to Q1 (2 Marks):

Skewness measures the asymmetry of a distribution. Positive skew indicates a long tail to the right, negative skew shows a long tail to the left, and zero skewness suggests symmetry.

Answer to Q2 (3 Marks):

A box plot represents the five‑number summary of a dataset: minimum, first quartile, median, third quartile and maximum. The box shows the interquartile range, the line marks the median, and whiskers extend to the extremes.

Answer to Q3 (6 Marks):

Correlation quantifies the linear relationship between two variables. Regression fits an equation to predict one variable from another. For the given data pairs, the correlation coefficient is approximately 0.986, indicating a strong positive linear relationship.

Answer to Q4 (3 Marks):

Imputation techniques include mean or median substitution, regression imputation and k‑nearest neighbours imputation. These methods estimate missing values to preserve overall patterns.

Answer to Q5 (6 Marks):

Hypothesis testing evaluates evidence against a null hypothesis. For example, testing whether a new drug is more effective than an existing one uses sample data to compute a test statistic; if it exceeds a critical value, the null hypothesis is rejected.