Statistics Assignment: Beginner to Intermediate Level

Instructions: Please solve the following questions with practical calculations. Use a calculator or software like Excel or Python for computations.

Q1: Calculate the mean, median, and mode of the following dataset:

Dataset: 12, 15, 12, 14, 19, 16, 18, 12, 16, 15

Q2: A class of students received the following scores in a test:

Scores: 45, 55, 65, 75, 85, 95, 100, 85, 90, 75

Calculate the standard deviation and variance of the scores.

Q3: A company wants to understand the performance of their marketing campaigns. They observed the following number of sales for 6 consecutive weeks:

Sales per week: 50, 60, 55, 65, 60, 70

What is the range and interquartile range (IQR) of the data?

Q4: A survey was conducted among 100 people to check their preferences for three different products (A, B, and C). The results are as follows:

Product A: 40 people
Product B: 35 people
Product C: 25 people

Calculate the probability of randomly selecting someone who prefers Product B.

Q5: A researcher collected data on the heights (in cm) of a sample of 50 individuals. The mean height of the sample is 170 cm, and the standard deviation is 10 cm. Assuming the heights are normally distributed, calculate the probability that a randomly selected person has a height greater than 180 cm.