Introduction to Data Science (IDS) Quiz -1 [Offline]

Date: September 16, 2023

Maximum Marks: 9 marks Time: 15 minutes

Question 1: What is the primary objective of exploratory data analysis (EDA) in data science?

a) To build machine learning models

b) To visualize data for presentation purposes

c) To summarize and gain insights from data

d) To clean and preprocess the data for analysis

Question 2: Which of the following statements is true about the bars in a histogram?

a) The bars in a histogram are separated by gaps.

b) The width of the bars in a histogram is determined by the data values.

c) The bars in a histogram can have different heights.

d) The bars in a histogram are always of equal width.

Question 3: In which scenario is a bar chart typically more appropriate than a histogram?

a) Visualizing the distribution of exam scores in a classroom.

b) Comparing the monthly sales of multiple products in a store.

c) Displaying the frequency of different age groups in a population.

d) Showing the distribution of temperatures throughout a day.

Question 4: In a scatter plot, what does it mean if the points are widely spread out with no apparent pattern?

a) There is a strong positive correlation.

b) There is a strong negative correlation.

c) There is no correlation.

d) There is a non-linear correlation.

Question 5: What is a random variable?

a) A variable with a fixed and known value.

b) A variable that can take on multiple values with known probabilities.

c) A variable that is completely unpredictable.

d) A variable with an infinite number of possible values.

Question 6: What does the area under the probability density function (PDF) of a continuous probability distribution represent?

a) The mean of the distribution

b) The variance of the distribution

c) The probability of a specific outcome

d) The total probability over the entire range of values

Question 7: In a hypothesis test, what does a small p-value (typically less than 0.05) indicate?

a) Strong evidence in favor of the null hypothesis

b) Strong evidence against the null hypothesis

c) Insufficient evidence to draw a conclusion

d) A perfectly accurate hypothesis test

Question 8: What is the purpose of a Type I error in hypothesis testing?

a) To accept the null hypothesis when it is true

b) To reject the null hypothesis when it is false

c) To determine the sample size needed for a hypothesis test

d) To calculate the margin of error in a confidence interval

Question 9: In a one-way ANOVA, what does the F-statistic compare?

a) The variance between groups to the variance within groups

b) The mean of the first group to the mean of the last group

c) The median values of all groups

d) The standard deviation of each group