1. What are the assumptions of linear regression?

Linear regression assumes the Normal or Gaussian distribution of the dependent variable.
It assumes the linear relationship between the dependent and independent variable.

2. When should you use logistic regression instead of linear regression?

When we need to classify data into some categories then logistic regression is used whereas to predict numerical value linear regression is used.
Logistic Regression is a classifier i.e. it predicts categorical target variables.
Linear Regression predicts continuous target variables.

3. What is the interpretation of coefficients in logistic regression?

In logistic regression, coefficients represent the change in the log-odds of the outcome for a one-unit change in the predictor variable, holding all other variables constant.
Positive Coefficient: As the predictor variable increases, log-odds and probability of the outcome are also increased.
Negative Coefficient: As the predictor variable increases, log-odds and probability of the outcome are decreased.

4. What is the difference between sigmoid and softmax functions?

Sigmoid Function	Softmax Function
Input: Single value	Input: Vector
Output: Single value between 0 and 1	Output: Vector whose values sum up to 1
Use: In binary-class classification	Use: In multi-class classification

5. Why is R-squared not suitable for evaluating logistic regression models?

R-squared represents the proportion of variance in the dependent variable that is explained by the independent variables.
Logistic Regression deals with probabilities and not the continuous values and concept of variance is not relevant in this case.
Therefore, r-squared is not suitable for evaluation logistic regression models.