Python worksheet:

1) C
2) B
3) C
4) A
5) D
6) C
7) A
8) A
9) A,C
10) A,B

Machine learning:

1) A
2) A
3) B
4) B
5) A
6) B
7) A
8) D
9) A
10) A
11) B
12) A,B

13) Regularization:

This is a form of regression, that constrains or regularizes or shrinks the coefficient estimates towards zero. In other words, this technique discourages learning a more complex or flexible model, so as to avoid the risk of overfitting.

14) Algorithms are used for regularization:

- Ridge regression
- Lasso
- Dropout

15) Error:

It refers to the sum of the deviations within the regression line, which provides an explanation for the difference between the theoretical value of the model and the actual observed results.

Statistics:

1) A	4) D	7) B
2) A	5) C	8) A
3) B	6) B	9) C

10) Normal distribution:

A normal distribution some times called the bell curve, is a distribution that occurs naturally in many situations. For example the bell curve is seen in tests like the SAT and GRE. The bell curve is symmetrical. Half the data will fall to the left of the mean, half will fall to the right.

11) A common technique is to use the mean or median of the non-missing observations. This can be useful in cases where the number of missing observations is low. However, for large number of missing values using mean or median can result in loss of variation in data and it is better to use imputations.

Imputation Technique:

- Complete case analysis
- Arbitrary value imputation
- Frequent category imputation

12) A/B Testing:

A/B testing is basically statistical hypothesis testing or in other words statistical inference. It is an analytical method for making decisions that estimates population parameters based on sample statistics.

13) Mean imputation of missing data acceptable practice:

True, imputing the mean preserves the mean of the observed data. So if the data are missing completely at random, th estimate of the mean remains unbiased. Since most research studies are interested in the relationship among variables, mean imputation is not a good solution.

14) Linear regression:

Linear regression attempts to model the relationship between two variables by fitting a linear equation to observed data. A linear regression line has an equationof the form $Y= a + bX$,

Where X = explanatory variable

Y = dependent variable

15) Types of statistics :

- Descriptive statistics
- Inferential statistics