2019-2020 Written Genetic PT

1. _____ PCR is a DNA-based test that yields a positive or negative result for the presence of GM.

2. Seed Calc can be used to determine the _____ of pools needed based on detection level of the test used and the GMO acceptance level.

3. Quantitative PCR yields a specific _____ of GM present in a given sample.

4. DNA is made up of _____ _____ held together with _____ bonds.

5. The basic principle of PCR is that of an exponential _____ in the amount of target _____.

6. Quantitative testing methods typically have software that calculates the percent _____ based on the standards used in the assay.

7. True or False Quantitative lateral flow strips are an immunoassay that yields only a positive or negative result.

8. True or False ELISA and Herbicide Bioassays are not typically used in AP/LLP testing but they are an option in certain circumstances.

9. Ture or False Results from each test should be considered based on upper limits of detection, technologies assayed, and seed lot sampling.

10. True or False Quantitative PCR require the use of 4 or more known standards to enable quantification.

11. True or False A sample must be representative of the seed lot to provide an accurate result reflecting the true contamination level.

12. True or False Quantitative lateral flow strips can be less expensive and labor intensive than other DNA methods.

13. True or False When using lateral flow strips, the protein from different traits express the same in different tissue types (seed, leaf) so its not important to understand what levels can be detected in the test.

2019-2020 Written Genetic PT

14. When choosing technologies for AP tests, what should be considered?
    a. Size of seed lot
    b. Detection limit of the test and the acceptable limit of AP
    c. The event in question
    d. All of the Above

15. For quantitative methods to provide an accurate result which of the below is recommended:
    a. Using two controls.
    b. Testing multiple reps.
    c. Using only assays to look for promoters.
    d. All of the above.

16. The four bases in DNA are:
    a. Adenine, Ribose, Guanine, and Cytosine
    b. Adenine, Uracil, Guanine, and Cytosine
    c. Ribose, Uracil, Thymine, and Adenine
    d. Adenine, Thymine, Guanine, and Cytosine

17. Adventitious presence is the _____ presence of another seed variety or genetic material.
    a. Intended
    b. Unintended
    c. Quantitative
    d. Qualitative

18. A negative result in AP/LLP testing means the contamination:
    a. May be lower than the LOD
    b. Is zero
    c. Both A and B
    d. Neither A or B

19. What is one of the biggest issues with AP/LLP testing?
    a. Determining what technology to use
    b. Interpreting results
    c. Sampling
    d. Extraction

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20. What is the purpose of AP or LLP event testing?

21. Name two scenarios where AP testing would be used.

22. Name two different technologies used to AP test.

23. Name two advantages of qualitative PCR.

24. What type of controls should be included in an AP test for comparisons?

25. What is a false error rate and why do labs need them?

26. Name two advantages to quantitative PCR testing.

27. Name two things that a lab should consider ensuring they are obtaining expected and accurate results when AP testing.

28. In Ct Target, what does Ct stand for?

29. What would you do if you performed a PCR on a traited sample and had inconsistent results?

30. List a main source of contamination in a seed crop.