

8. Application of Diagnostic Tests

- 8.1. The candidate will have **sound knowledge** of application of diagnostic tests and be able to explain the concepts behind the characteristics of diagnostic tests (For example why might a test be very sensitive, or very specific? How applicable are a tests characteristics in a different population?).
- 8.2. The candidate will be able to do the following with sound expertise:
 - 8.2.1. calculate and interpret the following measurements from information provided:
 - 8.2.1.1. measures of test validity — specificity, sensitivity
 - 8.2.1.2. measures of prevalence based on test results — apparent prevalence and true prevalence
 - 8.2.1.3. probability of individual status given test results — positive predictive value, negative predictive value.
 - 8.2.2. compare application of diagnostic tests in series and in parallel and give examples of the appropriate application of each approach.
 - 8.2.3. describe effects of prior probability on predictive value and interpret specific examples using these principles including:
 - 8.2.3.1. discussing with justification the characteristics of a diagnostic test/s suitable for use in regional animal disease programs particularly when disease prevalence is moderate-high versus low-zero.
 - 8.2.3.2. explaining how the interpretation of diagnostic test results will change over the course of a regional animal disease program that is aiming to reduce and then eradicate a disease.
 - 8.2.4. define herd-level sensitivity and specificity, and describe major determinants of these.