KEY TASKS PERFORMED BY ENTRY LEVEL/MINIMALLY COMPETENT ANATOMIC PATHOLOGISTS

TASK 1: Identify, describe and interpret microscopic conditions in domestic and non-domestic animals

- Tested using glass or virtual slide essays and MCQs
- ~40% of Phase II

Skills and knowledge to:
- Write a coherent, organized histopathologic description
- Give a morphologic diagnosis
- Give appropriate disease, condition, and/or differential diagnoses
- List potential causes(s)
- Describe/relate to associated macroscopic and clinicopathologic findings and changes in other organs
- Select appropriate ancillary tests and interpret their results (e.g. special stains, immunohistochemistry, electron microscopy, PCR-based clonality, flow cytometry, cytology, etc.)

TASK 2: Identify and interpret macroscopic conditions in domestic and non-domestic animals

- Tested via image-based MCQs
- ~20% of Phase II

Skills and knowledge to:
- Give a morphologic diagnosis
- Give appropriate disease, condition, or differential diagnoses
- List potential cause(s)
- Outline a pathogenesis
- Relate to clinical information and histologic findings
- Describe associated changes in other organs or clinicopathologic findings
- Select appropriate ancillary tests and interpret their results (e.g. special stains, immunohistochemistry, electron microscopy, PCR-based clonality, flow cytometry, cytology, in situ hybridization, etc.)

TASK 3: Interpret clinicopathologic data from domestic and non-domestic animals

- Tested via MCQs
- ~10% of the Phase II

Skills and knowledge to:
- Recognize the cause (or most likely causes) of laboratory abnormalities
- Integrate laboratory abnormalities into a diagnosis (or likely differential diagnoses)
- Select appropriate ancillary tests to further refine a diagnosis or differential diagnoses
TASK 4: Apply knowledge of the pathophysiology, progression and diagnosis of disease in animals

- Tested via non-image based MCQs
- ~30% of the Phase II

Using Knowledge of:
- The pathology and pathogenesis of diseases of domestic animals (cattle, sheep, goat, horse, dog, and cat).
- The pathology and pathogenesis of, and prognosis for, common conditions of nondomestic animals
- New and emerging diseases
- Well-recognized animal models of human disease
- Core concepts and current literature
- The integration of test results (microscopic, hematologic, biochemical, etc.) and clinical information

TASK 5 Demonstrate knowledge of laboratory technology

- Tested via non-image based MCQs
- ~2% of the Phase II

Using knowledge of:
- Principles of commonly used laboratory tests
- Quality assurance and quality control for laboratory tests

TASK 6 Demonstrate knowledge of the basic mechanisms of disease

- Tested via non-image based MCQs
- 100% if Phase 1

Using knowledge of:
- Mechanisms fundamental to disease in animals, including principles of:
  - Cellular injury
  - Inflammation and repair
  - Hemodynamic disorders
  - Physical and chemical injury
  - Neoplasia
  - Congenital and genetic diseases
  - Molecular pathology
  - Infectious processes
  - Immunology
- Mechanisms are general in nature in that they relate to most animal species

NON-TESTABLE TASKS (Currently listed on the CE Sponsor Verification Form)

TASK 7: Data Collection, Analysis and Interpretation

- Perform necropsies and collect gross morphometric data by weighing and/or measuring tissues, lesions, organs, whole animals, and other
specimens in accordance with established protocols and using professional judgment in order to understand pathogenesis, diagnose disease, and/or perform quantitative data analysis.

- Review antemortem data and history using a systematic process in order to support the collection of relevant samples.
- Collect specimens and/or guide others in sample collection according to protocols or professional judgment for histology, cytology, and other testing for subsequent analysis or archiving in order to preserve sample integrity.
- Describe gross morphological observations using a systematic approach and appropriate, medical terminology in order to provide a complete and accurate record.
- Integrate individual animal data by correlating clinical pathology, toxicology, diagnostic imaging, microbiology, and other test results with morphology in order to characterize the pathogenesis of disease or formulate a diagnosis.
- Identify artifacts in tissue sections and other samples using professional judgment and expertise in order to identify those that could be misinterpreted or impede the ability to assess the tissue response accurately.

**TASK 8:** Communicate pathology findings and their significance through clear and concise oral and written reports to regulators, clinicians, scientists and other stakeholders in order to provide appropriate context
KEY TASKS PERFORMED BY ENTRY LEVEL/MINIMALLY COMPETENT CLINICAL PATHOLOGISTS

TASK 1: Identify, describe and interpret microscopic abnormalities in blood, bone marrow, body fluids, and tissues (cytology and histology) from domestic and non-domestic animals

- *Tested via glass slides and image-based MCQs*
- *~30% of the Phase II examination*

Skills and knowledge to:
- Write a coherent, organized descriptive report
- Summarize the descriptive findings
- Make an interpretive conclusion(s) and/or diagnosis(es)
- List appropriate diseases, conditions, and/or differential diagnoses
- List potential causes
- Describe associated changes in other organs
- Outline appropriate ancillary tests and anticipated results (e.g. special stains, immunohistochemistry, electron microscopy, PCR-based clonality, flow cytometry, cytology, and other laboratory tests such as biochemistry, serology, microbiology, immunodiagnostics)

TASK 2: Recognize and interpret static visual test results pertinent to veterinary clinical pathology

- *Tested via image-based MCQs*
- *~10% of the Phase II examination*

Skills and knowledge for interpretation of:
- Hematology cytograms
- Flow cytometry plots
- Coagulation tracings
- Platelet aggregation plots
- Macroscopic hematology test results (eg. Coomb’s tests)
- Special and immunochemical stains
- Electron micrographs
- Quality assurance and quality control data
- PCR clonality results
- Serum protein electrophoretograms and immunofixation results??
- Blood typing and crossmatching results?

TASK 3: Interpret and communicate clinicopathologic data from domestic and non-domestic animals

- *Tested via case essays and MCQs*
- *~30% of the Phase II examination.*

Skills and knowledge to:
- Describe the pathophysiology of conditions leading to laboratory abnormalities
• Integrate laboratory abnormalities into a diagnosis (or differential diagnoses)
• List appropriate ancillary tests to further confirm differential diagnoses
• Interpret population laboratory data or study set data
• Interpret integrated laboratory results (biochemistry, urinalysis, serology, microbiology, serum protein electrophoresis, immunodiagnostics, coagulation, hematology, etc.)

**TASK 4: Apply the principles of commonly used laboratory instrumentation and methods**

- *Tested via non-image based MCQs*
- *~10% of the Phase II examination*

  Using knowledge of:
  - Analyzer methodologies and test procedure
  - Sample types and collection methods
  - Reference interval determination
  - Errors and interferences (pre-analytical, analytic and post-analytical)
  - Test properties (sensitivity, specificity, predictive values, ROC, etc.) and selection
  - Quality control, quality assurance, and relevant statistics
  - Reference interval and method validation principles and relevant statistics
  - Routine, special and immunochemical stains
  - Microscope principles
  - Laboratory safety, biosafety

**TASK 5: Apply knowledge of the pathophysiology and diagnosis of disease, with emphasis on manifestation in laboratory test data of animals**

- *Tested via non-image based MCQs*
- *~20% of the Phase II examination*

  Using knowledge of the pathogenesis, etiology and organ-based causes for the following disease processes:
  - Genetic
  - Disturbances of growth and neoplasia
  - Cell aging, degeneration, injury, and death
  - Infection, immunity, and inflammation
  - Metabolic, nutritional, and deficiency diseases
  - Hemodynamic and vascular diseases

**TASK 6 Demonstrate knowledge of the basic mechanisms of disease**

- *Tested via non-image based MCQs*
- *100% of Phase 1 (See Phase I Topic Distribution below)*

  Using knowledge of:
• Mechanisms fundamental to diseases in animals, including principles of:
  o Cellular injury
  o Inflammation and repair
  o Hemodynamic disorders
  o Physical and chemical injury
  o Neoplasia
  o Congenital and genetic diseases
  o Molecular pathology
  o Infectious processes
  o Immunology

• Mechanisms are general in nature in that they relate to most animal species

NON-TESTABLE TASKS (Currently listed on the CE Sponsor Verification Form)

TASK 7  Compose and communicate interpretation and significance of results
  • Write clinical pathology reports using training, experience, professional judgment and other information in order to convey the interpretation in a clear, concise, and accurate manner.
  • Communicate the significance of clinical pathology results using clear, concise oral and written language in order to convey the potential implications for a subject, patient, or population (animal and/or human).

TASK 8  Demonstrate Proficiency in Laboratory Management and Results Release Quality Practices
  • Define standard operating procedures in accordance with prescribed methods in order to ensure acceptable levels of quality and consistency.
  • Evaluate specimens, reagents, instruments, and personnel training by inspection, review and documentation in order to ensure the validity of data.
  • Evaluate data for evidence of pre-analytical and analytical error through inspection in order to determine if verification and troubleshooting are required to obtain reliable results.
  • Demonstrate overall laboratory management aptitude