Measuring What Matters in
Job Ready Assessment Blueprint
Small Animal Science and Technology

Test Code: 2003 / Version: 01
Copyright 2011
**General Assessment Information**

**Test Type:** The Small Animal Science and Technology assessment is included in NOCTI’s Job Ready assessment battery. Job Ready assessments measure technical skills at the occupational level and include items which gauge factual and theoretical knowledge. Job Ready assessments typically offer both a written and performance component and can be used at the secondary and post-secondary levels. Job Ready assessments can be delivered in an online or paper/pencil format.

**Revision Team:** The assessment content is based on input from secondary, post-secondary, and business/industry representatives from the states of Ohio, Idaho, Oklahoma, Pennsylvania, and Virginia.

---

**Blueprint Contents**

General Assessment Information  
Written Assessment Information  
Specific Competencies Covered in the Test  
Sample Written Items  
Performance Assessment Information  
Sample Performance Job

---

The Association for Career and Technical Education (ACTE), the leading professional organization for career and technical educators, commends all students who participate in career and technical education programs and choose to validate their educational attainment through rigorous technical assessments. In taking this assessment you demonstrate to your school, your parents and guardians, your future employers and yourself that you understand the concepts and knowledge needed to succeed in the workplace. Good Luck!
NOCTI written assessments consist of questions to measure an individual’s factual theoretical knowledge.

**Administration Time:** 3 hours  
**Number of Questions:** 196  
**Number of Sessions:** This assessment may be administered in one, two, or three sessions.

### Areas Covered

<table>
<thead>
<tr>
<th>Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety and Sanitation</td>
<td>7%</td>
</tr>
<tr>
<td>Animal Care Management</td>
<td>17%</td>
</tr>
<tr>
<td>Grooming</td>
<td>5%</td>
</tr>
<tr>
<td>Genetics and Reproduction</td>
<td>16%</td>
</tr>
<tr>
<td>Management of Small Animal-Related Businesses</td>
<td>8%</td>
</tr>
<tr>
<td>Animal First Aid</td>
<td>23%</td>
</tr>
<tr>
<td>Health and Disease Control</td>
<td>14%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>10%</td>
</tr>
</tbody>
</table>
**Specific Competencies and Skills Tested in this Assessment**

**Safety and Sanitation**
- Maintain a safe and sanitary environment
- Identify modes of transmission/prevention of zoonotic disease
- Identify and properly handle contaminated and hazardous material and chemicals

**Animal Care Management**
- Handle and restrain animals for various procedures
- Identify breeds and sex of animals (e.g., dogs, cats, rodents, rabbits, reptiles, birds)
- Feed and water animals and maintain sanitary cages
- Identify and manage care for animals at different life stages
- Gather data and maintain accurate records on animals
- Recognize and interpret animal body language
- Identify external anatomy
- Recognize issues of animal overpopulation and discuss prevention methods and benefits
- Identify training and enrichment methods and equipment

**Grooming**
- Select, identify, and properly use grooming equipment
- Select and prepare shampoos and rinses
- Trim nails on animals

(Continued on the following page)
Specific Competencies and Skills (continued)

Genetics and Reproduction
- Explain the different stages of mitosis and meiosis
- Define specific genetic and reproductive terminology, including sex-linked traits
- Use the Punnett Square to solve monohybrid cross, dihybrid cross, and quantitative factors
- Read and evaluate a pedigree
- Explain factors that affect reproductive health and fertility
- Identify and explain functions of reproductive organs
- Explain the role of hormones and factors that affect them
- Explain different phases of the reproductive/estrous cycle
- Explain the alternative methods of insemination
- List signs of parturition and manage care in mammals and reptiles

Management of Small Animal-Related Businesses
- Identify professional communications and service
- Schedule appointments and maintain appointment book
- Record/file client data
- Perform and maintain inventory and financial records
- Demonstrate business mathematics

(Continued on the following page)
Specific Competencies and Skills (continued)

Animal First Aid
- Identify medical terminology, equipment, and supplies
- Explain arterial and venous bleeding and identify pressure points
- Identify symptoms and treatment of shock
- Describe appropriate ways of approaching an injured animal
- Perform physical assessment/triage, including TPR
- Describe the ABCs of CPR procedures
- Prepare slides and operate various types of microscopes
- Operate scales and weigh/measure animals properly
- Identify and describe routes of medication administration
- Identify surgical instruments and prepare surgical packs
- Describe methods of anesthesia administration and monitoring
- Perform dosage rates and conversion
**Specific Competencies and Skills**

**Health and Disease Control**
- Perform examinations for internal and external parasites, including fecal exams, ear cytology, and skin scraping
- Identify common internal and external parasites
- Explain the differences between infectious and non-infectious diseases, viral and bacterial
- Explain and describe quarantine/isolation methods
- Describe the body’s response when exposed to disease (e.g., immunity, antibody/antigen)
- Explain how diseases are transmitted and prevention methods
- List characteristics of a healthy animal
- Discuss vaccination protocols

**Nutrition**
- Identify and explain functions of digestive system organs
- Explain the difference between a ruminant, cecal fermenter, non-ruminant, and a bird
- List the six nutrient groups and their function and sources
- Determine type of food to feed animals
- Read and interpret feed labels and follow appropriate storage methods
- List diseases associated with nutritional deficiency and/or toxicity
Sample Questions

The masking of one allele over the genes on another locus is called
   A. codominance
   B. epistasis
   C. meta-inheritance
   D. intermediate inheritance

Bleeding of a nail can be stopped by using
   A. scissors
   B. styptic powder
   C. cotton gauze
   D. a bandage

When reading a pedigree, the dam is the
   A. father
   B. grandfather
   C. mother
   D. litter mate

A female cat is called a
   A. boar
   B. queen
   C. bitch
   D. sow

Ingredients in pet food are listed in order by percentage of
   A. electrolytes
   B. protein content
   C. total weight
   D. moisture

(Continued on the following page)
Sample Questions (continued)

Which hormone maintains pregnancy?
   A. progesterone
   B. FSH
   C. LH
   D. estrogen

Uterine contractions and active pushing occur during _____ of labor
   A. stage I
   B. stage II
   C. stage III
   D. stage IV

In embryo transfers, a technique used to increase the number of eggs the female releases is
   A. superovulation
   B. oocytes
   C. blastocyst
   D. in-vitro fertilization

The juncture of the neck and the body, used to measure the height of a dog, is called the
   A. withers
   B. flews
   C. hocks
   D. stifle

The primary function of the small intestine is to
   A. break down food by muscular movement
   B. add lubricating mucus
   C. absorb water from undigested food
   D. digest and absorb carbohydrates, fats, and proteins
NOCTI performance assessments allow individuals to demonstrate their acquired skills by completing actual jobs using the tools, materials, machines, and equipment related to the technical area.

**Administration Time:** 2 hours and 30 minutes  
**Number of Jobs:** 6

**Areas Covered:**

10%  **Identify Tools and Equipment**  
Identification of tools/equipment, correct spelling of grooming equipment, and time to complete Job 1.

28%  **Restraint and Sex Determination of Small Animals**  
For three different small animals, remove from cage, pick up/lift correctly, restrain, determine sex, and time to complete Job 2.

15%  **Identify Parasites**  
Placed prepared slides on microscope stage, slides focused properly, pointer placed on egg, internal parasite eggs identified, external adult parasites identified, and time to complete Job 3.

24%  **Read Glass Thermometers and Fill Syringes**  
Accuracy of thermometer #1 (above 100°F) reading thermometer #2 (below 100°F), read and recorded within allotted time, select appropriate syringes and needles, draw-up fluid in syringes, and time to complete Job 4.

*(Continued on the following page)*
17%  **Canine: Safety, Handling, Restraint, Identification of External Anatomy of the Dog**
Lifting technique/body mechanics, dog properly supported, dog placed on table, dog restrained for cephalic blood draw, obtain pulse and respiration reading, identification of external anatomy, and time to complete Job 5.

6%  **Determine Proper Diet for Animals**
Selection of appropriate diet cards and time to complete Job 6.
Sample Job

Identify Tools and Equipment

**Maximum Time:** 20 minutes

**Participant Activity:** The participant will identify and correctly spell each of the displayed pieces of grooming equipment.