



## SKILLS LIST CARDIOLOGY CANDIDATES

All qualified candidates will have demonstrated basic veterinary technician skills such as but not limited to:

- a. Proper animal restraint
- b. Peripheral catheter placement
- c. Venipuncture
- d. Basic bandage application
- e. Administration of oral and parenteral medications
- f. Calculation of IV fluid drip rates
- g. Calculation of basic drug administration
- h. Knowledge of various routes of drug administration,
- i. Aseptic surgical area preparation
- j. Surgical supply sterilization preparation
- k. Recording of vital signs (Temp, Pulse, Resp, and Pain Asses.)
- l. Performance of basic laboratory tests (PCV, TP, UA, cytology staining, fecal analysis)
- m. Maintenance of proper medical records and knowledge of computer skills
- n. Surgical scrubbing and gowning
- o. Administration of Cardio-Pulmonary-Cerebral Resuscitation

These skills do not need to be verified individually and are only examples of base skills expected of all candidates.

AIMVT Cardiology candidates must demonstrate mastery of **80%** of the following skills for the application packet. Therefore at least 93 of the skills, as numbered, must be verified as “mastered” via signature/initials of a veterinarian or VTS. "Mastery" is defined as the ability to perform the skill with a high degree of success in different species and patients, with different disease conditions, and with minimal to no coaching or supervision.

Each skill must be verified and signed by the DVM or VTS who is the most qualified to verify mastery of the skill. In order of preference: Diplomate or VTS in ANY specialty of ACVIM or AIMVT, Diplomate or VTS in Anesthesia or Emergency & Critical Care, or a Diplomate in Clinical Practice or Surgery. If none of these Diplomates or VTS is available the Academy will accept verification by a licensed DVM with a letter from them stating that no Diplomate or VTS is easily available for the candidate to utilize.

All skills are to be performed in small animal species unless otherwise indicated. Candidates may go “outside” their own practice to locate the images or equipment necessary to complete the skills list. Supply or “pull lists” are submitted with the candidate application package.



APPLICANT NAME:		
Skill #	Task	Initials
1.	Characterize cardiac murmurs in five patients of two different species. Include grade (1-6), location (right or left hemithorax; apex or base) and timing, (systolic, diastolic or continuous)	
2.	Identify two patients with a gallop rhythm, split sound or mid-systolic click	
3.	Identify respiratory sinus arrhythmias on auscultation	
4.	Identify atrial fibrillation and ventricular premature contractions on auscultation	
5.	Identify ectopic beats on auscultation / palpation of pulse deficits	
6.	Identify paroxysmal tachycardia on auscultation	
7.	Demonstrate the ability to utilize a central venous pressure manometer	
8.	Demonstrate the ability to utilize a Doppler non-invasive blood pressure device	
9.	Demonstrate the ability to utilize a nasal oxygen delivery system	
10.	Demonstrate the ability to utilize a pulse oximeter	
11.	Calculate and administer a prescribed CRI	
12.	Collect an arterial blood sample	
13.	Place an indwelling central venous line or catheter introducer using a modified Seldinger technique	
14.	Produce diagnostic quality thoracic radiographs in the cat	
15.	Produce diagnostic quality thoracic radiographs in the dog	
16.	Calculate a Vertebral Heart Score/Sum on a lateral thoracic radiograph	
Identify on a VD radiograph the following:		
17.	Pericardial effusion	
18.	Pleural effusion	
19.	Pulmonary edema	
20.	Pulmonary artery enlargement	
21.	Right ventricular enlargement	
22.	Pacemaker leadwire	



APPLICANT NAME:		
Identify on a lateral thoracic radiograph the following:		
23.	Pleural effusion	
24.	Pericardial Effusion	
25.	Pulmonary edema	
26.	Left atrial enlargement	
27.	Left ventricular enlargement	
28.	Bronchus	
29.	Pulmonary arteries	
30.	Pulmonary veins	
31.	Caudal vena cava	
32.	Aorta	
33.	Acquire and print a 10 lead ECG including 6 lead frontal + 4 chest	
34.	Acquire and print a 50mm/sec strip for measurement	
35.	Acquire and print a rhythm strip	
36.	Record a base-apex lead ECG in a large animal species	
37.	Demonstrate the application of Holter or event monitors	
38.	Calculate the Mean Electrical Axis (MEA) of one normal and three abnormal ECG's. At least one ECG should be of a cat.	
Calculate the following ECG measurements of one normal and two abnormal ECG's:		
39.	P-R interval	
40.	Q-T interval	
41.	P wave amplitude and duration	
42.	QRS complex duration	
43.	R wave amplitude	
44.	T wave amplitude	
45.	Identify ECG artifacts due to motion (respiration, shiver, or limb movement)	
46.	Identify ECG artifacts due to poor electrode contact	
47.	Identify ECG artifacts due to AC current interference	



APPLICANT NAME:		
Identify the following arrhythmias on an ECG:		
48.	Supraventricular tachycardia	
49.	Atrial fibrillation	
50.	Sinus arrest	
51.	Sinus arrhythmia	
52.	Atrial premature complexes	
53.	1 <sup>st</sup> degree AV block	
54.	2 <sup>nd</sup> degree AV block	
55.	3 <sup>rd</sup> degree or complete AV block	
56.	Right bundle branch block	
57.	Left bundle branch block	
58.	Left anterior fascicular block	
59.	Ventricular premature complexes	
60.	Ventricular escape complexes	
61.	Ventricular tachycardia	
62.	Ventricular fibrillation	
63.	Right ventricular enlargement	
64.	Left ventricular enlargement	
Identify on echocardiogram:		
65.	Pulmonary artery dilation in the short axis basilar view	
66.	Pericardial effusion	
67.	Pleural effusion	
68.	Valvular regurgitation/insufficiency on Color Flow (CF) Doppler	
69.	Aliasing on pulsed wave Doppler	
70.	Aliasing on CF Doppler	
71.	Spontaneous echo contrast	
72.	Heartworms	
73.	Mitral valve thickening and prolapse	
74.	Cardiac masses such as hemangiosarcoma or chemodectoma	
75.	Systolic dysfunction or ventricular hypokinesis	
76.	Ventricular hypertrophy	
77.	Left atrial enlargement	
78.	Subvalvular aortic stenosis	
79.	Pulmonic valve stenosis	
80.	Patent ductus arteriosus	
81.	Ventricular septal defect	
82.	Right sided pressure overload	



APPLICANT NAME:		
Demonstrate the ability to record the following echocardiography views in a dog and identify the chambers or major vessels visible in each view:		
83.	Right parasternal four chamber long axis view	
84.	Right parasternal long axis five chamber or left ventricular outflow view	
85.	Right parasternal short axis view at the chordae tendineae level	
86.	Right parasternal short axis mitral valve level view	
87.	Right parasternal short axis view of the aorta/left atrium	
88.	Right parasternal short axis view of the pulmonary artery	
89.	M-Mode of the left ventricle from either a long or short axis view	
90.	M-Mode of the mitral valve from either a long or short axis view	
91.	M-Mode of the aorta and left atrium from either the long or short axis view	
Demonstrate the ability to measure M-modes of		
92.	Left ventricle fractional shortening (shortening fraction)	
93.	Aorta and left atrium ratio	
94.	Mitral valve E-point to septal separation (EPSS)	
95.	Demonstrate the ability to measure spectral Doppler velocity profiles	
96.	Set up and calibrate physiographic transducers to measure direct intracardiac and intravascular pressures	
Demonstrate the ability to identify the following cardiac catheters used for interventional and catheterization techniques and discuss their uses:		
97.	Pigtail	
98.	Multipurpose	
99.	Judkins style – Right and Left	
100.	Balloon valvuloplasty	
101.	Vascular introducers	
102.	NIH (aka WP catheter)	
103.	Berman	
104.	Heartworm retrieval systems	



APPLICANT NAME:		
105.	Identify normal cardiac structures on angiography	
106.	Identify a Patent Ductus Arteriosus on angiography	
107.	Identify Pulmonic Stenosis on angiography	
Develop a list of equipment needed (“pull list”) for each of the following procedures:		
108.	Abdominocentesis	
109.	Thoracocentesis	
110.	Pericardiocentesis	
111.	Balloon valvuloplasty	
112.	Micro-bubble air contrast echocardiogram	
113.	Transvenous temporary pacing	
114.	Transvenous permanent pacing	
115.	PDA embolization (with coils and/or Amplatz devices)	
116.	Demonstrate the ability to interrogate a pacemaker to determine battery life	

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Please print – Full name and title(s) of person(s) completing this form, sign your initials

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Additional names, titles, initials

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Additional names, titles, initials