FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
SCHOOL	VETERINARY MEDICINE		
SUBJECT	VETERINARY DIAGNOSTIC IMAGING		
SUBJECT CODE	V3721CD		
DATE	JUNE 2024		
DURATION	2 HOURS	**MARKS**	100

SECOND OPPORTUNITY EXAMINATION

Examiners: Dr. A Herbert
Internal Moderator: Dr. L. De Villiers
External Moderator: Dr. A Celliers

Instructions

1. Please answer all the questions on the examination paper provided.
2. Write your student number clearly on each page.
3. Answer ALL the questions.
4. Any form of malpractice is unacceptable
5. **This paper consists of 15 pages, including the cover sheet.**

QUESTION 1 (9 marks)

Examine the radiograph IMAGE 1 and answer the questions below:

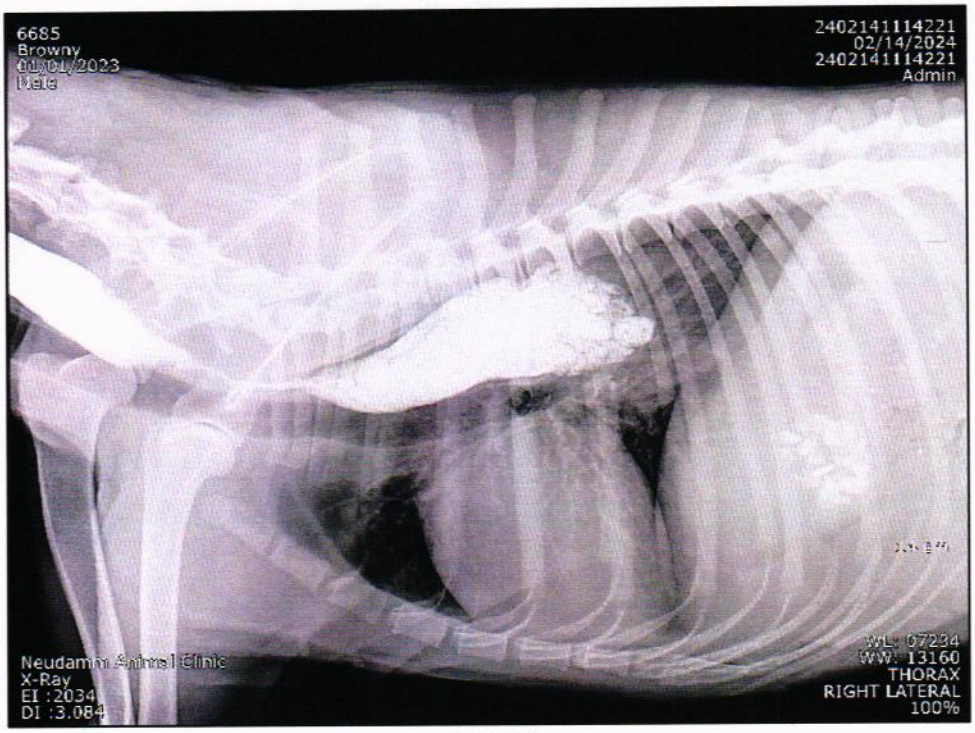


Image 1

1.1. Name the kind of study in IMAGE 1 (1 mark).

1.2. Name the agent used in the study in IMAGE 1 (1 mark).

1.3. Name the specific study related to the organ containing medium in IMAGE 1 (1 mark).

1.4. Describe 1 (ONE) complication and consequence, respectively, which may arise from the study in IMAGE 1 (2 marks).

1.5. Describe 3 (THREE) practical steps you would follow to conduct the study in IMAGE 1 (3 marks).

1.6. Identify the most probable pathology identified in IMAGE 1 (1).

QUESTION 2 (19 marks)

Examine the radiograph IMAGE 2 and answer the questions below:

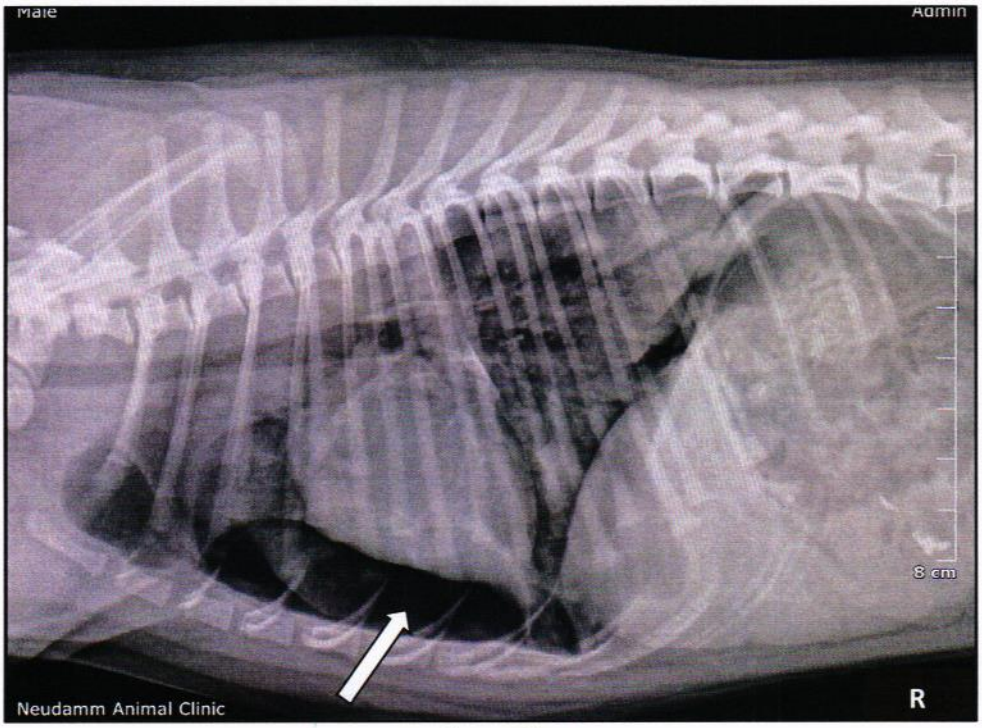


Image 2

2.1. Name the body part radiographed and radiographic view in IMAGE 2 (3 marks).

2.2. Describe the standard radiographic positions for the area in IMAGE 2 (0.5 x 4 = 2marks).

2.3. In which situation should one of the views listed above not be used and name the view in question (2 marks).

2.4. Describe the positioning that will allow proper visualization of this body part, applicable to all views, and explain the reason for this positioning (2 marks).

2.5. Evaluate the quality of the radiograph IMAGE 2 (0.5 x 14 = 7 marks).

2.6. Name the opacity of the area indicated by the arrow in IMAGE 2 (1 mark).

2.7. Name the medium represented by the opacity indicated by the arrow in IMAGE 2 (1 mark).

2.8. Explain what is the most probable diagnosis in this case (1 mark).

QUESTION 3 (11 marks)

Examine the radiograph IMAGE 3 and answer the questions below:

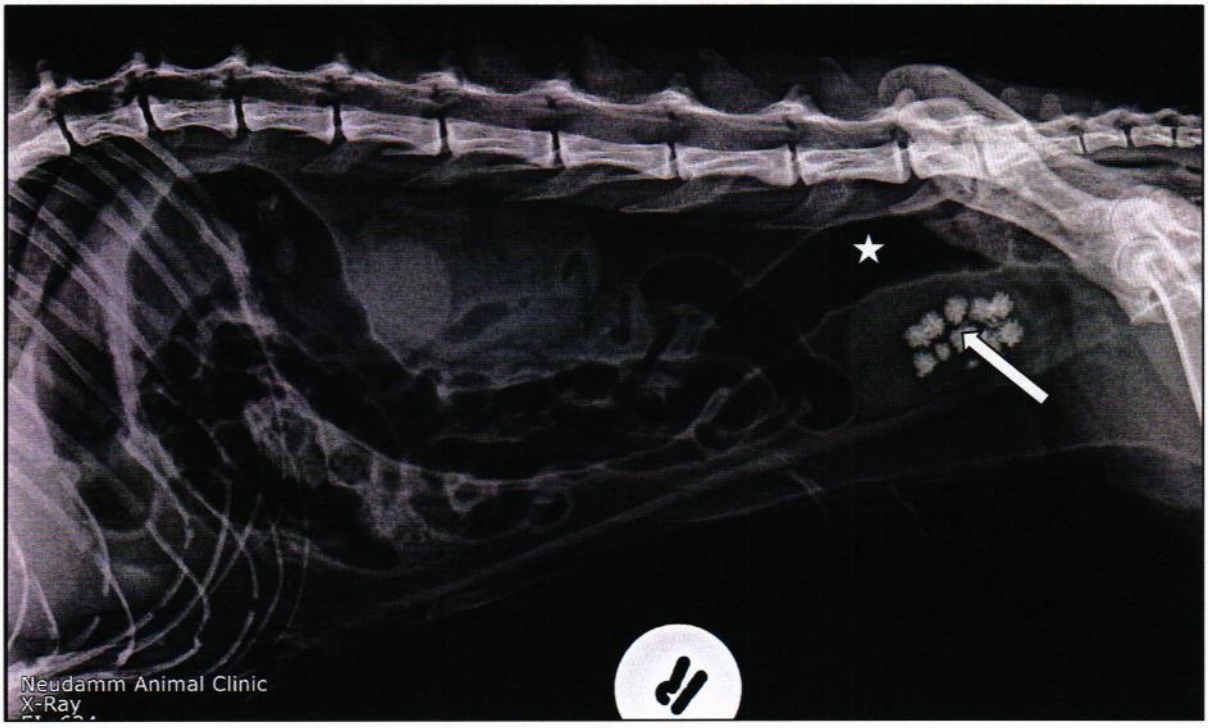


Image 3

3.1. Name the species in the radiograph IMAGE 3. Justify your answer (2 marks).

3.2. Name the radiographic view and body part depicted in IMAGE 3 (3 marks).

3.3. Describe the radiopacity of the medium indicated by the arrow in IMAGE 3 (1 mark).

3.4. Name the medium represented by the opacity indicated by the arrow in IMAGE 3 (1 mark).

3.5. Give the most probable diagnosis for the condition in IMAGE 3 (2 marks).

3.6. Name the organ indicated by the star in IMAGE 3. Justify your answer (2 marks).

QUESTION 4 (5 marks)

Examine the radiograph IMAGE 4 and answer the questions below:



Image 4

4.1. Name the pattern of bone production change seen in the radiograph IMAGE 4 (1 mark).

4.2. Describe the cortical reaction in IMAGE 4 (1 mark).

4.3. Describe the transition zone in IMAGE 4. Justify your answer (2 marks).

4.4. Deduct the aggressiveness of the bone lesion depicted in the radiograph IMAGE 4 (1 mark).

QUESTION 5 (11 marks)

Examine the radiograph IMAGE 5 and answer the questions below:

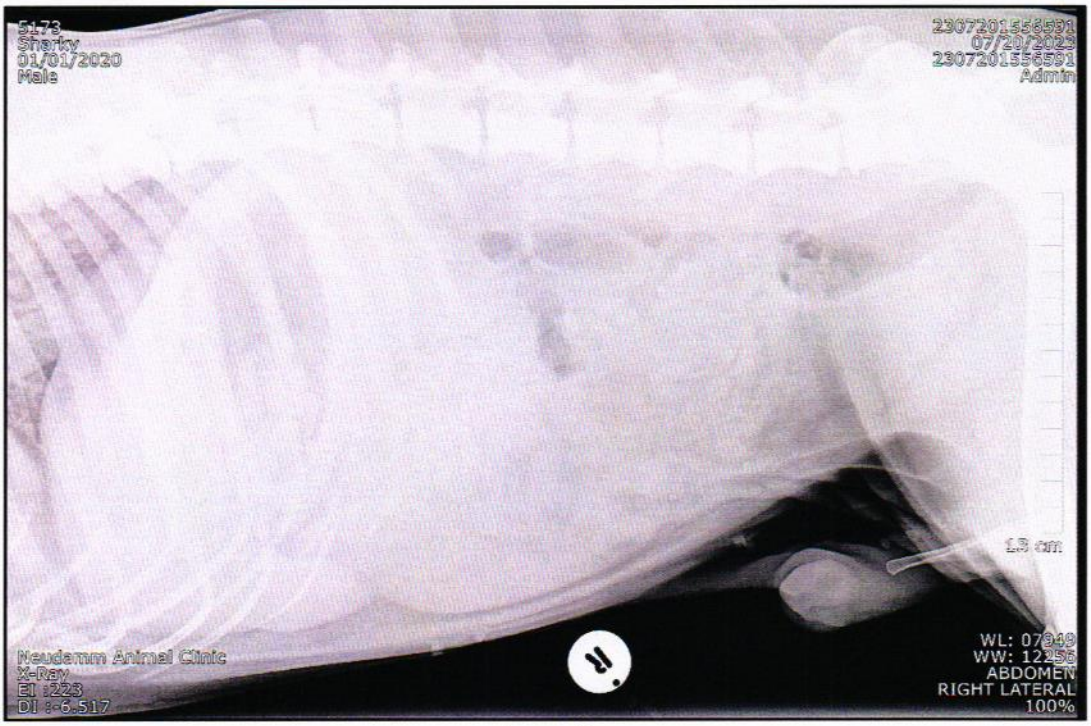


Image 5

5.1. Evaluate the quality of the exposure of the radiograph in IMAGE 5. Justify your answer (2 marks).

5.2. Describe the process of evaluating the need for any possible adjustment to the exposure factors (6 marks).

5.3. Explain how you would adjust the exposure factors to yield a better-quality image of the abdomen (1 mark).

5.4. Name 2 (TWO) important aspects when positioning a patient for a spinal radiograph (2 marks).

QUESTION 6 (6 marks)

Examine the component in IMAGE 6 and answer the questions below:

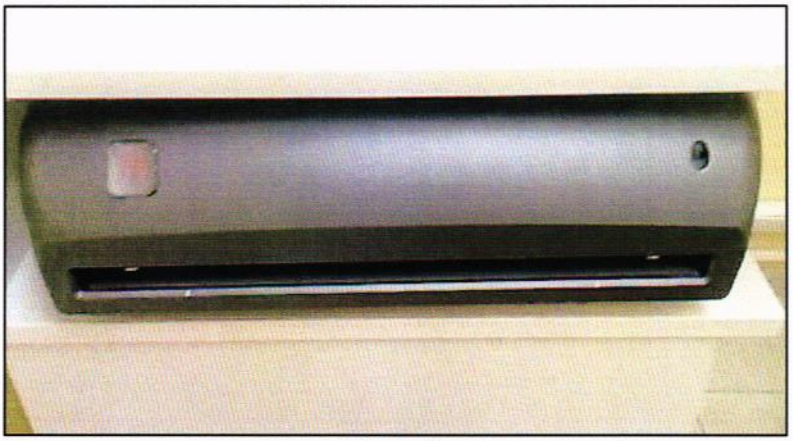


Image 6

6.1. Name the radiographic component depicted in IMAGE 6 (1 mark).

6.2. Name the type of digital radiography which makes use of the equipment in IMAGE 6 (1 mark).

6.3. List 4 (FOUR) advantages of digital radiography compared to analogue (film) radiography (4 marks).

QUESTION 7 (11 marks)

Examine the ultrasound IMAGE 7 and answer the questions below:

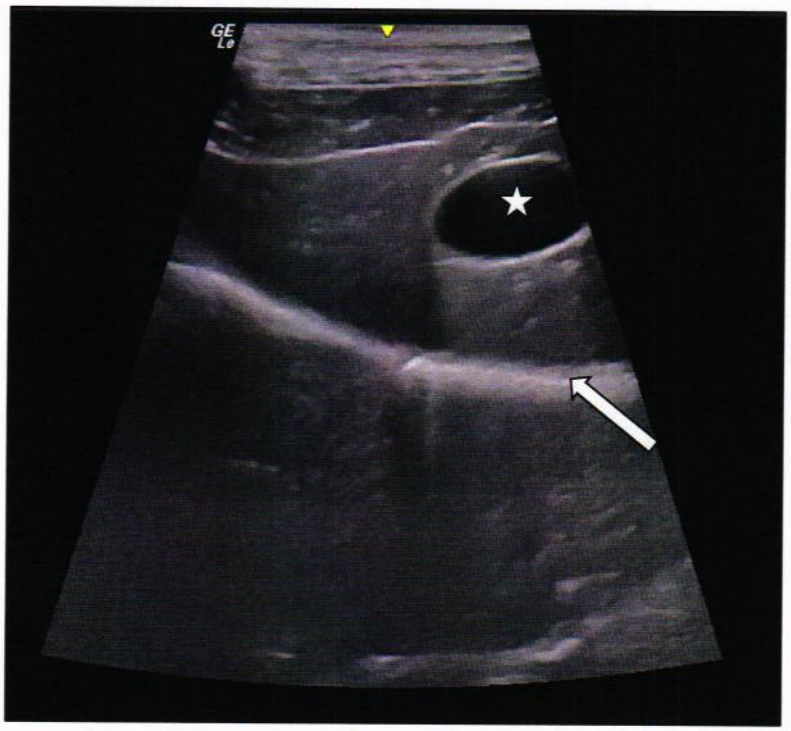


Image 7

7.1. Name the ultrasonography artefact illustrated in IMAGE 7 (1 mark).

7.2. Explain the formation of the artefact in IMAGE 7 (4 marks).

7.3. Name the anatomical structure indicated by a star in IMAGE 7. Justify your answer (3 marks).

7.4. Identify the structure indicated by the arrow in IMAGE 7. Justify your answer (3 marks).

QUESTION 8 (6 marks)

Examine the ultrasound IMAGE 8 and answer the questions below:

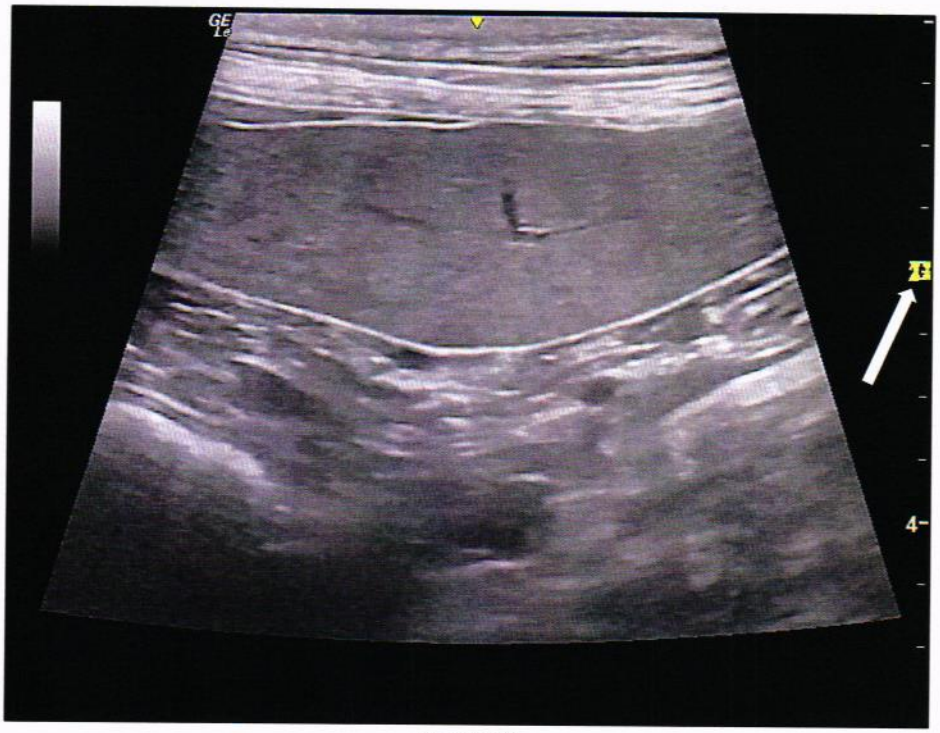


Image 8

8.1. Identify the organ in IMAGE 8 (1 mark).

8.2. Arrange the following organs in order, from anechoic to hyperechoic: diaphragm, liver, gall bladder, spleen (0.5 x 4 = 2 marks).

8.3. Name the ultrasound marker indicated by the arrow in IMAGE 8 (1 mark).

8.4. Explain where the marker in 8.3 should ideally be placed on an ultrasound image (1 mark).

8.5. In the sagittal view, indicate where on the ultrasound screen the cranial part of the patient is displayed (1 mark).

QUESTION 9 (6 marks)

Examine the ultrasound IMAGE 9 and answer the questions below:

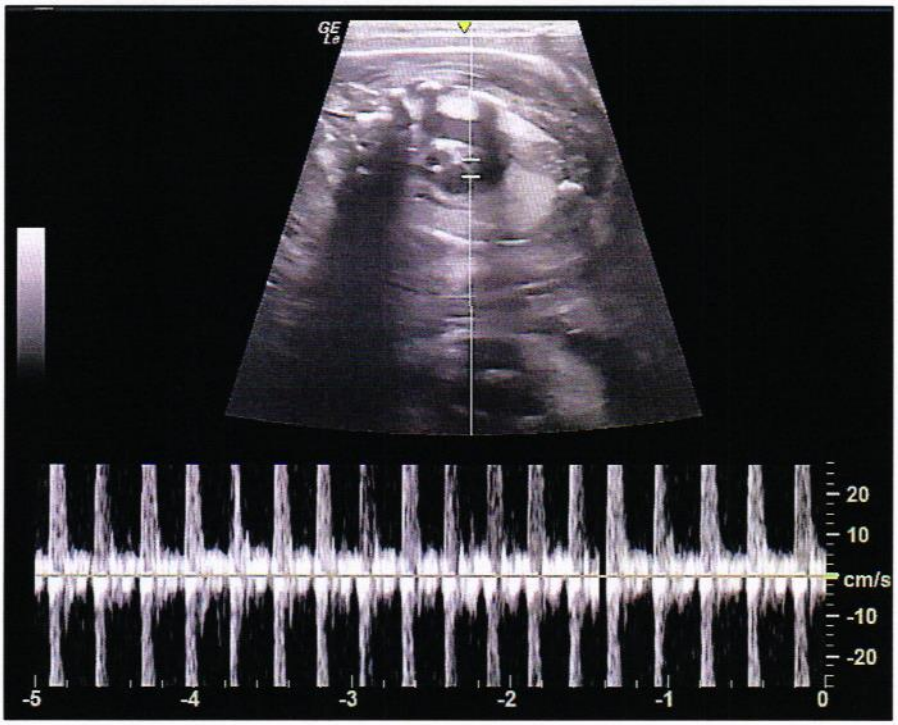


Image 9

9.1. Name the ultrasound mode displayed in IMAGE 9 (1 mark).

9.2. What is this ultrasound mode used for? (1 mark).

9.3. Name the 4 (FOUR)-point sonographic views used in the AFAST examination (4 marks).

QUESTION 10 (10 marks)

Examine the components in IMAGES 10 and 11 and answer the questions below:

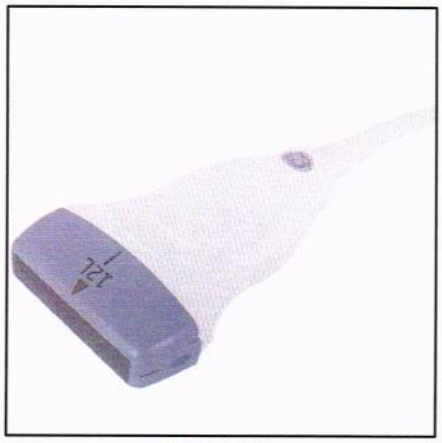


Image 10



Image 11

10.1. Name the component in IMAGE 10 (1 mark).

10.2. Name the component in IMAGE 11 (1 mark).

10.3. Define the term and unit of 'frequency' in ultrasonography (2 marks).

10.4. Describe the relationship between frequency and wavelength in ultrasonography (1 mark).

10.5. Explain how the frequency influences penetration and resolution in ultrasonography (2 marks).

10.6. Explain what penetration and resolution the component in IMAGE 10 provides (2 marks).

10.7. Describe in which situation the component in IMAGE 11 would be used (1 mark).

QUESTION 11 (6 marks)

11.1. Name 1 (ONE) advantage and 1 (ONE) disadvantage of MRI compared to CT (2 marks).

11.2. Name the kind of disease that fluoroscopy is mainly used to diagnose (1 mark).

11.3. Name the most common radioisotope used in scintigraphy (1 mark).

11.4. Explain what a 'hot spot' is in scintigraphy (2 marks).

End of paper