



PROFICIENCY EXAMINATION: EXAMPLE MULTIPLE CHOICE QUESTIONS

Answer 'True' (T) or 'False' (F) to each of the following. Each correct answer gains one mark/point, and each incorrect answer loses one mark/point. A question left blank does not gain or lose any marks/points.

Questions:

Q In an ultrasound imaging system:

1

- a). Sector width, sector depth and frame rate can all be controlled independently F
- b). Frame rate falls as sector width increases T
- c). Using a lower frequency transducer improves the frame rate F
- d). The frame rate increases as sector depth increases F
- e). Using Colour Flow Doppler reduces the frame rate T

Q On a Spectral Doppler display:

2

- a). The velocity at which aliasing occurs increases at higher ultrasound frequencies F
- b). The velocity at which aliasing occurs increases at greater depths F
- c). The velocity at which aliasing occurs increases at greater sector angle F
- d). At 2 MHz the aliasing velocity at 10 cm is approximately 1.5 m/s T
- e). The aliasing velocity can be increased by increasing the pulse rate (High PRF) T

Q In assessing Tricuspid Regurgitation:

3

- a). Pulmonary systolic pressure (PAP) can be calculated using the formula $PAP = 4 \times (\text{Peak TR Velocity})^2$ F
- b). Presence of proximal flow acceleration indicates at least moderately severe TR T

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- c) Both apical and parasternal views should be used to view the colour jet T
 - d) In very severe ('free') regurgitation, the calculation of pulmonary pressure is invalid T
 - e) Additional information can be obtained from flow patterns in the SVC and IVC T

Q 4 In a patient with systemic hypertension:

- a) Mean LV wall thicknesses are always greater than 1.1 cm F
- b) Peak aortic ejection velocity is increased F
- c) Typically the trans-mitral e-wave has reduced amplitude and increased deceleration time T
- d) Typically the Isovolumic Relaxation Time (IVRT) is reduced F
- e) The presence of mitral or aortic regurgitation indicates additional pathology F

Q 5 An Atrial Septal Defect (ASD) may be associated with:

- a) Paradoxical interventricular septal motion T
- b) No obvious defect of the atrial septum on imaging T
- c) Right ventricular dilatation T
- d) Left ventricular dilatation F
- e) Flow of blood from left atrium to right atrium T