***Essentials of Sonographic Image Interpretation***

**MULTIPLE CHOICE QUESTIONS**

*Select the best answer for each of the following questions*

1. All of the following are considered characteristics that contribute to interpretation of a sonographic image except :
   1. Structural morphology
   2. Acoustic physical interactions
   3. Transducer selection
   4. Classification of structures
2. All of the following are considered morphology characteristics demonstrated by a structure on a sonographic image except:
   1. Contour
   2. Internal echo pattern
   3. Focal vs. diffuse
   4. Attenuation
3. All of the following are considered characteristics related to acoustical physical interactions demonstrated sonographically in a structure except:
   1. Contour
   2. Attenuation
   3. Posterior acoustic enhancement
   4. Posterior acoustic shadowing
4. All of the following are classification types of structures displayed on a sonographic image except:
   1. Cystic
   2. Bright
   3. Solid
   4. Complex
5. \_\_\_\_\_\_\_\_\_\_ refers to the overall appearance of an anatomic organ or pathologic structure.
   1. Echogenicity
   2. Density
   3. Morphology
   4. Sharpness
6. The two sonographic characteristics of a structure that contribute to its morphological description are:
   1. Contour, internal echo pattern
   2. Echogenicity, density
   3. Brightness, borders
   4. Attenuation, density
7. The \_\_\_\_\_\_\_\_\_\_ of a structure refers to its shape, outline, or boundaries.
   1. Echogenicity
   2. Attenuation
   3. Reflection
   4. Contour
8. All of the following can be used to describe contour boundaries except:
   1. Smoothly marginated
   2. Posterior acoustic enhancement
   3. Well-defined
   4. Irregularly marginated
9. Any structure that produces echoes is called:
   1. Anechoic
   2. Diffuse
   3. Echogenic
   4. Enhancing
10. Anechoic is defined as:
    1. The absence of echoes within a structure
    2. The production of echoes within a structure
    3. A relative increase in amplitude of returning echoes
    4. A relative decrease in amplitude of returning echoes
11. The term sonolucent is synonymous as:
    1. Hypoechoic
    2. Hyperechoic
    3. Acoustic enhancement
    4. Anechoic
12. Hyperechoic is defined as:
    1. The absence of echoes within a structure
    2. The production of echoes within a structure
    3. A relative increase in amplitude of returning echoes
    4. A relative decrease in amplitude of returning echoes
13. Hypoechoic is defined as:
    1. The absence of echoes within a structure
    2. The production of echoes within a structure
    3. A relative increase in amplitude of returning echoes
    4. A relative decrease in amplitude of returning echoes
14. The term echopenic is synonymous as:
    1. Hypoechoic
    2. Hyperechoic
    3. Acoustic enhancement
    4. Anechoic
15. A structure that contains a mix of hyperechoic and hypoechoic areas, can be described as:
    1. Hyperechoic
    2. Hypoechoic
    3. Heterogeneous
    4. Homogeneous
16. A structure that appears uniformly echogenic, either hyperechoic or hypoechoic, can be described as:
    1. Hyperechoic
    2. Hypoechoic
    3. Heterogeneous
    4. Homogeneous
17. The term used to describe a structure that demonstrates alterations in sonographic appearance dispersed evenly throughout and typically represent histological changes that affect the entire organ is:
    1. Homogeneous
    2. Diffuse
    3. Focal
    4. Echogenic
18. The term used to describe a region in a solid structure that is discrete, well-marginated and of differing echogenicity than that of the surrounding tissue is:
    1. Homogeneous
    2. Diffuse
    3. Focal
    4. Echogenic
19. All of the following physical phenomena contribute to the process of attenuation except:
    1. Transmission
    2. Absorption
    3. Reflection
    4. Scattering
20. The decrease in amplitude and intensity of a sound wave as it is transmitted through a medium is called:
    1. Transmission
    2. Attenuation
    3. Scattering
    4. Refraction
21. An excessive loss of acoustic energy as it propagates through a tissue bed it is described as:
    1. Anechoic
    2. Hyperechoic
    3. Hypoattenuation
    4. Hyperattenuating
22. An exaggerated manifestation of hyperattenuation wherein there is almost complete dropout of echogenicity behind a highly reflective surface is called:
    1. Refractory artifact
    2. Hypoechogenicity
    3. Posterior acoustic shadowing
    4. Posterior acoustic enhancement
23. The most common source of a posterior acoustic shadow is the presence of:
    1. Calcium
    2. Water
    3. Fat
    4. Muscle
24. All of the following pathological conditions typically result in posterior acoustic shadowing except:
    1. Gall stones
    2. Renal cyst
    3. Kidney stones
    4. Teratomas
25. Which of the following physical interactions causes the echogenicity of the area behind a structure to appear increased compared to adjacent tissue areas?
    1. Posterior acoustic shadowing
    2. Posterior acoustic enhancement
    3. Refraction
    4. Attenuation
26. Which of the following sonographic imaging artifacts suggests the presence of metal surgical clips in the field of view?
    1. Critical angle
    2. Side lobe
    3. Comet-tail
    4. Ring-down
27. Which of the following sonographic imaging artifacts is useful in identifying cholesterol crystal in adenomyomatosis of the gall bladder?
    1. Critical angle
    2. Side lobe
    3. Comet-tail
    4. Ring-down
28. Which of the following sonographic imaging artifacts is useful in identifying the presence of small air bubbles associated with a pathological condition?
    1. Critical angle
    2. Side lobe
    3. Comet-tail
    4. Ring-down
29. Cystic structures are:
    1. Fluid-filled
    2. Fat-filled
    3. Tissue-filed
    4. Heterogeneous
30. Classic sonographic characteristics of a simple cystic structure include all of the following except:
    1. Distinct borders
    2. Hyperattenuation
    3. Anechoic interior
    4. Posterior acoustic enhancement
31. The sonographic appearance of solid structures is due primarily to which of the following physical phenomena?
    1. Attenuation
    2. Refraction
    3. Backscatter
    4. Reflection
32. A structure that appears sonographically as containing both cystic and solid elements is described as:
    1. Hyperechoic
    2. Solid
    3. Cystic
    4. Complex