PRACTICE EXAM 17: VASCULAR TECHNOLOGY SIMULATION (170 QUESTIONS)

This practice examination contains 170 questions. Allow approximately three hours. Select the single best answer for each question. The official ARDMS VT examination uses a scaled score from 300 to 700, with 555 required to pass; this practice score is not an official scaled score.

1. A vascular technologist reviews findings related to vertebral artery flow direction. Which interpretation is most appropriate?

A. antegrade toward the brain
B. retrograde toward the arm
C. bidirectional with every heartbeat
D. absent during diastole

2. A vascular technologist reviews findings related to renal artery resistance. Which interpretation is most appropriate?

A. high-resistance waveform with absent diastolic flow
B. low-resistance waveform with continuous diastolic flow
C. venous respiratory phasicity
D. bidirectional systolic flow

3. A vascular technologist reviews findings related to common femoral vein landmark. Which interpretation is most appropriate?

A. medial to the common femoral artery near the groin
B. lateral to the common femoral artery near the groin
C. posterior to the profunda femoris artery only

D. inside the femoral artery wall in the stated examination setting

4. A vascular technologist reviews findings related to normal common carotid artery spectral waveform. Which interpretation is most appropriate?

A. high-resistance flow with absent diastolic velocity
B. low-resistance flow with persistent forward diastolic velocity
C. continuous nonphasic venous flow
D. bidirectional flow throughout systole

5. A vascular technologist reviews findings related to normal lower-extremity venous Doppler. Which interpretation is most appropriate?

A. triphasic arterial pulsatility
B. continuous high-velocity systolic flow
C. respiratory phasicity and augmentation
D. persistent reflux after release

6. A vascular technologist reviews findings related to superior mesenteric artery fasting waveform. Which interpretation is most appropriate?

A. low-resistance pattern identical to the renal artery
B. continuous nonpulsatile flow
C. retrograde flow throughout systole
D. high-resistance pattern with limited diastolic flow

7. A vascular technologist reviews findings related to common femoral artery branches. Which interpretation is most appropriate?

A. radial and ulnar arteries
B. superficial femoral and profunda femoris arteries

C. anterior and posterior tibial arteries
D. internal and external carotid arteries

8. A vascular technologist reviews findings related to normal internal carotid artery waveform. Which interpretation is most appropriate?

A. high resistance with little diastolic flow
B. venous phasicity with augmentation
C. low resistance with substantial forward diastolic flow
D. to-and-fro flow at the origin

9. A vascular technologist reviews findings related to hepatic vein waveform. Which interpretation is most appropriate?

A. triphasic high-resistance arterial flow
B. continuous flow without cardiac variation
C. to-and-fro flow at a neck
D. multiphasic flow influenced by the cardiac cycle

10. A vascular technologist reviews findings related to small saphenous vein course. Which interpretation is most appropriate?

A. posterior calf toward the popliteal region
B. anterior thigh toward the femoral vein
C. medial thigh toward the common femoral artery
D. deep calf beside the anterior tibial artery

11. A vascular technologist reviews findings related to aortic bifurcation. Which interpretation is most appropriate?

A. right and left common iliac arteries

B. right and left renal arteries
C. superior and inferior mesenteric arteries
D. common femoral and profunda arteries

12. A vascular technologist reviews findings related to normal lower-extremity artery at rest. Which interpretation is most appropriate?

A. continuous monophasic low-resistance waveform
B. triphasic high-resistance waveform
C. nonphasic venous waveform
D. to-and-fro pseudoaneurysm waveform

13. A vascular technologist reviews findings related to celiac artery fasting waveform. Which interpretation is most appropriate?

A. high-resistance pattern with minimal diastolic flow
B. continuous venous waveform
C. reversed systolic flow
D. low-resistance pattern with forward diastolic flow

14. A vascular technologist reviews findings related to brachial artery bifurcation. Which interpretation is most appropriate?

A. axillary and subclavian arteries
B. anterior and posterior tibial arteries
C. radial and ulnar arteries
D. common and profunda femoral arteries

15. A vascular technologist reviews findings related to normal external carotid artery waveform. Which interpretation is most appropriate?

A. marked continuous diastolic flow like the ICA
B. relatively high resistance with brisk systolic upstroke
C. respiratory phasicity without pulsatility
D. reversed systolic flow at baseline

16. A vascular technologist reviews findings related to portal vein flow direction. Which interpretation is most appropriate?

A. hepatofugal flow away from the liver
B. alternating flow with respiration
C. hepatopetal flow toward the liver
D. retrograde flow toward the spleen

17. A vascular technologist reviews findings related to great saphenous vein location. Which interpretation is most appropriate?

A. deep to the femoral artery throughout the thigh
B. lateral to the fibula within muscle
C. inside the popliteal artery sheath
D. within the saphenous compartment along the medial limb

18. A vascular technologist reviews findings related to popliteal artery branches. Which interpretation is most appropriate?

A. anterior tibial artery and tibioperoneal trunk
B. radial artery and ulnar artery
C. celiac artery and superior mesenteric artery
D. internal carotid and external carotid arteries

19. In a new clinical scenario involving vertebral artery flow direction, which choice best explains the expected observation?

A. retrograde toward the arm
B. bidirectional with every heartbeat
C. absent during diastole
D. antegrade toward the brain

20. In a new clinical scenario involving renal artery resistance, which choice best explains the expected observation?

A. high-resistance waveform with absent diastolic flow
B. venous respiratory phasicity
C. low-resistance waveform with continuous diastolic flow
D. bidirectional systolic flow

21. In a new clinical scenario involving common femoral vein landmark, which choice best explains the expected observation?

A. lateral to the common femoral artery near the groin
B. medial to the common femoral artery near the groin
C. posterior to the profunda femoris artery only
D. inside the femoral artery wall in the stated examination setting

22. In a new clinical scenario involving normal common carotid artery spectral waveform, which choice best explains the expected observation?

A. low-resistance flow with persistent forward diastolic velocity
B. high-resistance flow with absent diastolic velocity
C. continuous nonphasic venous flow
D. bidirectional flow throughout systole

23. In a new clinical scenario involving normal lower-extremity venous Doppler, which choice best explains the expected observation?

A. respiratory phasicity and augmentation
B. triphasic arterial pulsatility
C. continuous high-velocity systolic flow
D. persistent reflux after release

24. In a new clinical scenario involving superior mesenteric artery fasting waveform, which choice best explains the expected observation?

A. low-resistance pattern identical to the renal artery
B. high-resistance pattern with limited diastolic flow
C. continuous nonpulsatile flow
D. retrograde flow throughout systole

25. In a new clinical scenario involving common femoral artery branches, which choice best explains the expected observation?

A. radial and ulnar arteries
B. anterior and posterior tibial arteries
C. internal and external carotid arteries
D. superficial femoral and profunda femoris arteries

26. In a new clinical scenario involving normal internal carotid artery waveform, which choice best explains the expected observation?

A. high resistance with little diastolic flow
B. venous phasicity with augmentation
C. low resistance with substantial forward diastolic flow
D. to-and-fro flow at the origin

27. In a new clinical scenario involving hepatic vein waveform, which choice best explains the expected observation?

A. triphasic high-resistance arterial flow
B. multiphasic flow influenced by the cardiac cycle
C. continuous flow without cardiac variation
D. to-and-fro flow at a neck

28. In a new clinical scenario involving small saphenous vein course, which choice best explains the expected observation?

A. anterior thigh toward the femoral vein
B. medial thigh toward the common femoral artery
C. posterior calf toward the popliteal region
D. deep calf beside the anterior tibial artery

29. In a new clinical scenario involving aortic bifurcation, which choice best explains the expected observation?

A. right and left common iliac arteries
B. right and left renal arteries
C. superior and inferior mesenteric arteries
D. common femoral and profunda arteries

30. In a new clinical scenario involving normal lower-extremity artery at rest, which choice best explains the expected observation?

A. continuous monophasic low-resistance waveform
B. nonphasic venous waveform
C. to-and-fro pseudoaneurysm waveform
D. triphasic high-resistance waveform

31. In a new clinical scenario involving celiac artery fasting waveform, which choice best explains the expected observation?

A. high-resistance pattern with minimal diastolic flow
B. low-resistance pattern with forward diastolic flow
C. continuous venous waveform
D. reversed systolic flow

32. In a new clinical scenario involving brachial artery bifurcation, which choice best explains the expected observation?

A. axillary and subclavian arteries
B. anterior and posterior tibial arteries
C. common and profunda femoral arteries
D. radial and ulnar arteries

33. In a new clinical scenario involving normal external carotid artery waveform, which choice best explains the expected observation?

A. marked continuous diastolic flow like the ICA
B. respiratory phasicity without pulsatility
C. relatively high resistance with brisk systolic upstroke
D. reversed systolic flow at baseline

34. In a new clinical scenario involving portal vein flow direction, which choice best explains the expected observation?

A. hepatopetal flow toward the liver
B. hepatofugal flow away from the liver
C. alternating flow with respiration
D. retrograde flow toward the spleen

35. In a new clinical scenario involving great saphenous vein location, which choice best explains the expected observation?

A. deep to the femoral artery throughout the thigh
B. lateral to the fibula within muscle
C. inside the popliteal artery sheath
D. within the saphenous compartment along the medial limb

36. In a new clinical scenario involving popliteal artery branches, which choice best explains the expected observation?

A. anterior tibial artery and tibioperoneal trunk
B. radial artery and ulnar artery
C. celiac artery and superior mesenteric artery
D. internal carotid and external carotid arteries

37. A vascular technologist reviews findings related to pseudoaneurysm neck. Which interpretation is most appropriate?

A. continuous antegrade low-resistance flow
B. to-and-fro spectral Doppler flow
C. triphasic arterial flow without reversal
D. respiratory phasic venous flow

38. A vascular technologist reviews findings related to tardus-parvus waveform. Which interpretation is most appropriate?

A. sharp upstroke with high pulsatility in the stated examination setting
B. to-and-fro flow in a pseudoaneurysm neck
C. delayed systolic upstroke and reduced amplitude distal to obstruction
D. normal venous phasicity in the stated examination setting

39. A vascular technologist reviews findings related to Budd-Chiari syndrome. Which interpretation is most appropriate?

A. superior mesenteric arterial embolism
B. hepatic venous outflow obstruction
C. isolated carotid bifurcation plaque
D. lower-extremity superficial reflux

40. A vascular technologist reviews findings related to mesenteric ischemia after a meal. Which interpretation is most appropriate?

A. postprandial abdominal pain from inadequate flow reserve
B. arm claudication from vertebral reversal
C. leg edema from superficial reflux
D. headache from temporal arteritis

41. A vascular technologist reviews findings related to deep venous obstruction clue. Which interpretation is most appropriate?

A. brisk augmentation after distal compression
B. complete compressibility at every level
C. normal valve closure in the stated examination setting
D. loss of respiratory phasicity in a peripheral vein

42. A vascular technologist reviews findings related to chronic deep venous thrombosis. Which interpretation is most appropriate?

A. dilated vein with free-floating hypoechoic clot
B. completely compressible vein without residual material
C. retracted vein with echogenic wall-adherent material and collaterals
D. normal respiratory phasicity only in the stated examination setting

43. A vascular technologist reviews findings related to hemodynamically significant arterial stenosis. Which interpretation is most appropriate?

A. uniform velocity decrease without focal disturbance
B. complete venous compressibility in the stated examination setting
C. normal respiratory phasicity in the stated examination setting
D. focal velocity increase with turbulence and distal spectral broadening

44. A vascular technologist reviews findings related to fibromuscular dysplasia. Which interpretation is most appropriate?

A. isolated ostial plaque at the aortic origin
B. uniform venous wall thickening in the stated examination setting
C. alternating stenosis and dilation in the mid-to-distal renal artery
D. complete renal vein thrombosis in the stated examination setting

45. A vascular technologist reviews findings related to May-Thurner anatomy. Which interpretation is most appropriate?

A. right renal vein compressed by the SMA in the stated examination setting
B. left common iliac vein compressed by the right common iliac artery
C. left carotid compressed by the jugular vein in the stated examination setting
D. popliteal artery compressed by the tibial vein in the stated examination setting

46. A vascular technologist reviews findings related to Baker cyst. Which interpretation is most appropriate?

A. fluid collection in the popliteal fossa that may mimic DVT symptoms
B. arterial plaque at the femoral bifurcation in the stated examination setting
C. aneurysm of the carotid bulb in the stated examination setting
D. thrombus in the portal vein in the stated examination setting

47. A vascular technologist reviews findings related to aortic dissection. Which interpretation is most appropriate?

A. isolated echogenic plaque without a flap
B. intimal flap separating true and false lumens
C. venous valve leaflet in the IVC
D. normal aortic pulsatility in the stated examination setting

48. A vascular technologist reviews findings related to pseudoaneurysm sac. Which interpretation is most appropriate?

A. uniform absence of color in every setting
B. laminar single-color venous flow
C. triphasic spectral tracing only
D. yin-yang bidirectional color pattern

49. A vascular technologist reviews findings related to subclavian steal physiology. Which interpretation is most appropriate?

A. carotid flow reversal caused by distal femoral disease
B. portal reversal caused by renal stenosis
C. vertebral flow reversal caused by proximal subclavian obstruction
D. venous reflux caused by carotid plaque

50. A vascular technologist reviews findings related to median arcuate ligament compression. Which interpretation is most appropriate?

A. elevated celiac velocity that may vary with respiration
B. fixed renal vein occlusion unaffected by breathing
C. carotid stenosis relieved by arm exercise
D. femoral DVT with triphasic flow

51. A vascular technologist reviews findings related to renal artery stenosis consequence. Which interpretation is most appropriate?

A. portal hypertension through splenic reflux
B. venous claudication through calf reflux
C. carotid bruit through jugular obstruction
D. renovascular hypertension through reduced renal perfusion

52. A vascular technologist reviews findings related to compartment syndrome perfusion. Which interpretation is most appropriate?

A. benign condition excluded by any Doppler signal
B. venous disorder diagnosed by reflux alone
C. clinical emergency despite potentially preserved large-artery signals
D. carotid disorder diagnosed by bruit

53. A vascular technologist reviews findings related to venous reflux. Which interpretation is most appropriate?

A. brief forward augmentation after distal compression
B. reversed flow persisting beyond the accepted provocative interval
C. arterial triphasic flow at rest
D. complete venous compression in the stated examination setting

54. A vascular technologist reviews findings related to arterial occlusion. Which interpretation is most appropriate?

A. no detectable flow with collateral reconstitution distally
B. focal high velocity through a patent lumen
C. normal triphasic flow throughout
D. venous reflux after Valsalva

55. A vascular technologist reviews findings related to portal hypertension. Which interpretation is most appropriate?

A. triphasic peripheral arterial flow in the stated examination setting
B. isolated high-resistance renal flow in the stated examination setting
C. normal hepatopetal flow without collaterals in the stated examination setting
D. dilated portal system with reduced or reversed portal flow and collaterals

56. A vascular technologist reviews findings related to popliteal artery aneurysm complication. Which interpretation is most appropriate?

A. isolated portal hypertension
B. mural thrombus with distal embolization
C. carotid body tumor formation
D. renal cortical infarction only

57. A vascular technologist reviews findings related to thoracic outlet arterial compression. Which interpretation is most appropriate?

A. dynamic subclavian waveform change with provocative positioning
B. fixed portal reversal after eating
C. renal venous reflux with Valsalva
D. carotid plaque disappearance on inspiration

58. A vascular technologist reviews findings related to acute deep venous thrombosis. Which interpretation is most appropriate?

A. small compressible vein with echogenic walls
B. triphasic arterial waveform
C. dilated noncompressible vein with hypoechoic thrombus
D. normal augmentation and complete coaptation

59. A vascular technologist reviews findings related to arteriovenous fistula. Which interpretation is most appropriate?

A. low-resistance feeding artery and pulsatile draining vein
B. high-resistance feeding artery and nonpulsatile vein
C. absent arterial and venous flow
D. normal triphasic artery with respiratory vein

60. A vascular technologist reviews findings related to carotid plaque surface ulceration. Which interpretation is most appropriate?

A. smooth intimal surface without color penetration
B. complete acoustic shadow without visible lumen
C. normal jugular venous valve in the stated examination setting
D. irregular crater extending into plaque with flow entering it

61. A vascular technologist reviews findings related to nutcracker phenomenon. Which interpretation is most appropriate?

A. right renal artery compression behind the IVC
B. portal vein compression by the spleen
C. left renal vein compression between the SMA and aorta
D. femoral vein compression by the profunda artery

62. A vascular technologist reviews findings related to carotid body tumor. Which interpretation is most appropriate?

A. avascular cyst compressing the jugular vein in the stated examination setting
B. hypervascular mass that splays the internal and external carotid arteries
C. thrombus confined to the common carotid lumen
D. plaque at the subclavian origin in the stated examination setting

63. A vascular technologist reviews findings related to aneurysm measurement. Which interpretation is most appropriate?

A. inner lumen only along an oblique plane
B. color jet width parallel to flow in the stated examination setting
C. outer wall to outer wall perpendicular to the vessel axis
D. spectral envelope height in the stated examination setting

64. In a new clinical scenario involving pseudoaneurysm neck, which choice best explains the expected observation?

A. continuous antegrade low-resistance flow
B. triphasic arterial flow without reversal
C. respiratory phasic venous flow
D. to-and-fro spectral Doppler flow

65. In a new clinical scenario involving tardus-parvus waveform, which choice best explains the expected observation?

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A. dilated vein with free-floating hypoechoic clot
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C. completely compressible vein without residual material
D. normal respiratory phasicity only in the stated examination setting

70. In a new clinical scenario involving hemodynamically significant arterial stenosis, which choice best explains the expected observation?

A. focal velocity increase with turbulence and distal spectral broadening
B. uniform velocity decrease without focal disturbance
C. complete venous compressibility in the stated examination setting
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C. popliteal artery compressed by the tibial vein in the stated examination setting
D. left common iliac vein compressed by the right common iliac artery

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80. In a new clinical scenario involving venous reflux, which choice best explains the expected observation?

A. brief forward augmentation after distal compression
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C. arterial triphasic flow at rest
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C. normal triphasic flow throughout
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82. In a new clinical scenario involving portal hypertension, which choice best explains the expected observation?

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C. dilated portal system with reduced or reversed portal flow and collaterals
D. normal hepatopetal flow without collaterals in the stated examination setting

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C. absent arterial and venous flow
D. normal triphasic artery with respiratory vein

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A. smooth intimal surface without color penetration
B. irregular crater extending into plaque with flow entering it
C. complete acoustic shadow without visible lumen
D. normal jugular venous valve in the stated examination setting

88. In a new clinical scenario involving nutcracker phenomenon, which choice best explains the expected observation?

A. left renal vein compression between the SMA and aorta
B. right renal artery compression behind the IVC
C. portal vein compression by the spleen
D. femoral vein compression by the profunda artery

89. In a new clinical scenario involving carotid body tumor, which choice best explains the expected observation?

A. avascular cyst compressing the jugular vein in the stated examination setting
B. thrombus confined to the common carotid lumen
C. plaque at the subclavian origin in the stated examination setting
D. hypervascular mass that splays the internal and external carotid arteries

90. In a new clinical scenario involving aneurysm measurement, which choice best explains the expected observation?

A. inner lumen only along an oblique plane
B. color jet width parallel to flow in the stated examination setting
C. outer wall to outer wall perpendicular to the vessel axis
D. spectral envelope height in the stated examination setting

91. A vascular technologist reviews findings related to EVAR endoleak. Which interpretation is most appropriate?

A. normal flow confined to the graft lumen in the stated examination setting
B. venous flow in the inferior vena cava in the stated examination setting
C. artifact removed by lowering gain in the stated examination setting
D. persistent blood flow outside the graft but within the aneurysm sac

92. A vascular technologist reviews findings related to prosthetic graft infection concern. Which interpretation is most appropriate?

A. perigraft fluid or gas with compatible clinical findings
B. uniform graft wall appearance alone
C. normal triphasic distal flow in the stated examination setting
D. expected color fill throughout in the stated examination setting

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B. normal triphasic distal flow in the stated examination setting
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A. persistent blood flow outside the graft but within the aneurysm sac
B. normal flow confined to the graft lumen in the stated examination setting
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A. uniform graft wall appearance alone
B. perigraft fluid or gas with compatible clinical findings
C. normal triphasic distal flow in the stated examination setting
D. expected color fill throughout in the stated examination setting

101. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.8
B. 0.2
C. 1.2
D. 5

102. A vascular technologist reviews findings related to reactive hyperemia testing. Which interpretation is most appropriate?

A. measures carotid intima thickness
B. confirms venous valve anatomy
C. classifies endoleaks in the stated examination setting
D. assesses arterial reserve after temporary occlusion

103. A vascular technologist reviews findings related to pulse volume recording distal disease. Which interpretation is most appropriate?

A. sharp peak with normal dicrotic features
B. damped contour with delayed upstroke and reduced amplitude
C. respiratory phasic venous tracing in the stated examination setting
D. to-and-fro pseudoaneurysm tracing in the stated examination setting

104. A vascular technologist reviews findings related to reactive hyperemia testing. Which interpretation is most appropriate?

A. measures carotid intima thickness
B. confirms venous valve anatomy
C. classifies endoleaks in the stated examination setting
D. assesses arterial reserve after temporary occlusion

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106. A vascular technologist reviews findings related to reactive hyperemia testing. Which interpretation is most appropriate?

A. assesses arterial reserve after temporary occlusion
B. measures carotid intima thickness
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D. classifies endoleaks in the stated examination setting

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B. respiratory phasic venous tracing in the stated examination setting
C. damped contour with delayed upstroke and reduced amplitude
D. to-and-fro pseudoaneurysm tracing in the stated examination setting

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A. assesses arterial reserve after temporary occlusion
B. measures carotid intima thickness
C. confirms venous valve anatomy
D. classifies endoleaks in the stated examination setting

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A. measures carotid intima thickness
B. confirms venous valve anatomy
C. classifies endoleaks in the stated examination setting
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111. In a new clinical scenario involving pulse volume recording distal disease, which choice best explains the expected observation?

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B. respiratory phasic venous tracing in the stated examination setting
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D. 5

114. In a new clinical scenario involving reactive hyperemia testing, which choice best explains the expected observation?

A. measures carotid intima thickness
B. assesses arterial reserve after temporary occlusion
C. confirms venous valve anatomy
D. classifies endoleaks in the stated examination setting

115. In a new clinical scenario involving pulse volume recording distal disease, which choice best explains the expected observation?

A. sharp peak with normal dicrotic features
B. respiratory phasic venous tracing in the stated examination setting
C. damped contour with delayed upstroke and reduced amplitude
D. to-and-fro pseudoaneurysm tracing in the stated examination setting

116. In a new clinical scenario involving reactive hyperemia testing, which choice best explains the expected observation?

A. assesses arterial reserve after temporary occlusion
B. measures carotid intima thickness
C. confirms venous valve anatomy
D. classifies endoleaks in the stated examination setting

117. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.2
B. 1.2
C. 5
D. 0.8

118. In a new clinical scenario involving reactive hyperemia testing, which choice best explains the expected observation?

A. measures carotid intima thickness
B. assesses arterial reserve after temporary occlusion
C. confirms venous valve anatomy
D. classifies endoleaks in the stated examination setting

119. In a new clinical scenario involving pulse volume recording distal disease, which choice best explains the expected observation?

A. sharp peak with normal dicrotic features
B. damped contour with delayed upstroke and reduced amplitude
C. respiratory phasic venous tracing in the stated examination setting
D. to-and-fro pseudoaneurysm tracing in the stated examination setting

120. In a new clinical scenario involving reactive hyperemia testing, which choice best explains the expected observation?

A. measures carotid intima thickness
B. confirms venous valve anatomy
C. classifies endoleaks in the stated examination setting
D. assesses arterial reserve after temporary occlusion

121. A vascular technologist reviews findings related to intraoperative completion duplex. Which interpretation is most appropriate?

A. replace all surgical inspection in the stated examination setting
B. measure only venous reflux in the stated examination setting
C. identify residual stenosis, flap, thrombosis, or technical defect
D. exclude flow evaluation in the stated examination setting

122. A vascular technologist reviews findings related to procedure timeout. Which interpretation is most appropriate?

A. verify patient, procedure, site, and required resources before starting
B. perform after needle insertion in the stated examination setting
C. replace informed consent in the stated examination setting
D. omit when the patient is known

123. A vascular technologist reviews findings related to manual pseudoaneurysm compression. Which interpretation is most appropriate?

A. compress the neck while monitoring sac and distal arterial flow
B. compress only the distal artery in the stated examination setting
C. avoid Doppler monitoring in the stated examination setting
D. stop when sac flow increases in the stated examination setting

124. A vascular technologist reviews findings related to biopsy or access guidance. Which interpretation is most appropriate?

A. advance the needle beyond the image plane
B. visualize the needle continuously and plan a path avoiding vessels
C. maximize output without reason in the stated examination setting
D. ignore anticoagulation history in the stated examination setting

125. A vascular technologist reviews findings related to needle visualization. Which interpretation is most appropriate?

A. use the steepest possible angle in the stated examination setting
B. turn off all gain in the stated examination setting
C. image only after advancement in the stated examination setting
D. align the beam to improve reflection from the needle

126. A vascular technologist reviews findings related to sterile transducer preparation. Which interpretation is most appropriate?

A. use nonsterile gel inside an open wound in the stated examination setting
B. place the cable across the field uncovered in the stated examination setting
C. use a sterile cover and sterile coupling medium without contaminating the field
D. omit probe disinfection in the stated examination setting

127. A vascular technologist reviews findings related to vasovagal response during procedure. Which interpretation is most appropriate?

A. stop, assess the patient, and summon appropriate clinical support
B. continue without monitoring in the stated examination setting
C. place the patient upright immediately in the stated examination setting
D. increase compression without evaluation in the stated examination setting

128. A vascular technologist reviews findings related to venous ablation guidance. Which interpretation is most appropriate?

A. place the catheter within a deep artery
B. ignore the saphenofemoral junction in the stated examination setting
C. omit postprocedure deep-vein assessment in the stated examination setting
D. confirm catheter position and tumescent anesthesia around the target vein

129. A vascular technologist reviews findings related to intraoperative carotid assessment. Which interpretation is most appropriate?

A. assess only jugular compressibility in the stated examination setting
B. evaluate lumen, residual plaque, flap, and flow after repair
C. measure ankle pressure only in the stated examination setting
D. ignore spectral Doppler in the stated examination setting

130. A vascular technologist reviews findings related to pseudoaneurysm thrombin injection guidance. Which interpretation is most appropriate?

A. place the needle blindly into the parent artery in the stated examination setting
B. inject without confirming flow in the stated examination setting
C. keep the needle tip visible within the sac away from the neck
D. compress the distal artery throughout injection in the stated examination setting

131. A vascular technologist reviews findings related to post-thrombin assessment. Which interpretation is most appropriate?

A. confirm parent artery occlusion in the stated examination setting
B. confirm sac thrombosis and parent artery patency with distal perfusion
C. expect increased neck flow in the stated examination setting
D. avoid checking pedal signals in the stated examination setting

132. A vascular technologist reviews findings related to postprocedure hematoma. Which interpretation is most appropriate?

A. evaluate size, internal flow, and relationship to nearby vessels
B. assume every mass is thrombosed in the stated examination setting
C. use compression without checking perfusion in the stated examination setting
D. ignore expanding symptoms in the stated examination setting

133. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.2
B. 1.2
C. 5
D. 0.8

134. A vascular technologist reviews findings related to resistive index. Which interpretation is most appropriate?

A. end-diastolic divided by peak systolic velocity in the stated examination setting
B. peak systolic plus end-diastolic velocity in the stated examination setting
C. peak systolic minus end-diastolic velocity divided by peak systolic velocity
D. mean velocity divided by vessel diameter in the stated examination setting

135. A vascular technologist reviews findings related to mirror artifact. Which interpretation is most appropriate?

A. duplicated structure across a strong reflector
B. color wraparound from low scale
C. shadow behind calcification
D. loss of slow flow from wall filter

136. A vascular technologist reviews findings related to critical result workflow. Which interpretation is most appropriate?

A. leave an unconfirmed voicemail only
B. wait until the next routine visit
C. tell the patient a final diagnosis independently
D. follow the laboratory's documented escalation and read-back process

137. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.2
B. 0.8
C. 1.2
D. 5

138. A vascular technologist reviews findings related to resistive index. Which interpretation is most appropriate?

A. end-diastolic divided by peak systolic velocity in the stated examination setting
B. peak systolic plus end-diastolic velocity in the stated examination setting
C. peak systolic minus end-diastolic velocity divided by peak systolic velocity
D. mean velocity divided by vessel diameter in the stated examination setting

139. A vascular technologist reviews findings related to mirror artifact. Which interpretation is most appropriate?

A. color wraparound from low scale
B. shadow behind calcification
C. duplicated structure across a strong reflector
D. loss of slow flow from wall filter

140. A vascular technologist reviews findings related to critical result workflow. Which interpretation is most appropriate?

A. leave an unconfirmed voicemail only
B. wait until the next routine visit
C. tell the patient a final diagnosis independently
D. follow the laboratory's documented escalation and read-back process

141. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.8
B. 0.2
C. 1.2
D. 5

142. A vascular technologist reviews findings related to resistive index. Which interpretation is most appropriate?

A. end-diastolic divided by peak systolic velocity in the stated examination setting
B. peak systolic minus end-diastolic velocity divided by peak systolic velocity
C. peak systolic plus end-diastolic velocity in the stated examination setting
D. mean velocity divided by vessel diameter in the stated examination setting

143. A vascular technologist reviews findings related to mirror artifact. Which interpretation is most appropriate?

A. color wraparound from low scale
B. shadow behind calcification
C. duplicated structure across a strong reflector
D. loss of slow flow from wall filter

144. A vascular technologist reviews findings related to critical result workflow. Which interpretation is most appropriate?

A. follow the laboratory's documented escalation and read-back process
B. leave an unconfirmed voicemail only
C. wait until the next routine visit
D. tell the patient a final diagnosis independently

145. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.2
B. 0.8
C. 1.2
D. 5

146. A vascular technologist reviews findings related to resistive index. Which interpretation is most appropriate?

A. end-diastolic divided by peak systolic velocity in the stated examination setting
B. peak systolic plus end-diastolic velocity in the stated examination setting
C. mean velocity divided by vessel diameter in the stated examination setting
D. peak systolic minus end-diastolic velocity divided by peak systolic velocity

147. A vascular technologist reviews findings related to mirror artifact. Which interpretation is most appropriate?

A. color wraparound from low scale
B. shadow behind calcification
C. loss of slow flow from wall filter
D. duplicated structure across a strong reflector

148. A vascular technologist reviews findings related to critical result workflow. Which interpretation is most appropriate?

A. follow the laboratory's documented escalation and read-back process
B. leave an unconfirmed voicemail only
C. wait until the next routine visit
D. tell the patient a final diagnosis independently

149. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.2
B. 0.8
C. 1.2
D. 5

150. A vascular technologist reviews findings related to resistive index. Which interpretation is most appropriate?

A. end-diastolic divided by peak systolic velocity in the stated examination setting
B. peak systolic plus end-diastolic velocity in the stated examination setting
C. peak systolic minus end-diastolic velocity divided by peak systolic velocity
D. mean velocity divided by vessel diameter in the stated examination setting

151. A vascular technologist reviews findings related to mirror artifact. Which interpretation is most appropriate?

A. color wraparound from low scale
B. duplicated structure across a strong reflector
C. shadow behind calcification
D. loss of slow flow from wall filter

152. A vascular technologist reviews findings related to critical result workflow. Which interpretation is most appropriate?

A. leave an unconfirmed voicemail only
B. wait until the next routine visit
C. follow the laboratory's documented escalation and read-back process
D. tell the patient a final diagnosis independently

153. A renal waveform has a peak systolic velocity of 110 cm/s and end-diastolic velocity of 22 cm/s. What is the resistive index?

A. 0.2
B. 1.2
C. 5
D. 0.8

154. In a new clinical scenario involving resistive index, which choice best explains the expected observation?

A. peak systolic minus end-diastolic velocity divided by peak systolic velocity
B. end-diastolic divided by peak systolic velocity in the stated examination setting
C. peak systolic plus end-diastolic velocity in the stated examination setting
D. mean velocity divided by vessel diameter in the stated examination setting

155. In a new clinical scenario involving mirror artifact, which choice best explains the expected observation?

A. duplicated structure across a strong reflector
B. color wraparound from low scale
C. shadow behind calcification
D. loss of slow flow from wall filter

156. In a new clinical scenario involving critical result workflow, which choice best explains the expected observation?

A. leave an unconfirmed voicemail only
B. wait until the next routine visit
C. tell the patient a final diagnosis independently
D. follow the laboratory's documented escalation and read-back process

157. A vascular technologist reviews findings related to technical limitation documentation. Which interpretation is most appropriate?

A. omit nondiagnostic segments from the report
B. invent normal findings for unseen vessels
C. state the limitation and its effect on the examination
D. blame the patient without detail in the stated examination setting

158. A vascular technologist reviews findings related to informed cooperation. Which interpretation is most appropriate?

A. promise a specific diagnosis in the stated examination setting
B. explain the examination in understandable language and answer questions
C. avoid describing compression maneuvers in the stated examination setting
D. continue despite withdrawn cooperation in the stated examination setting

159. A vascular technologist reviews findings related to exam modification. Which interpretation is most appropriate?

A. extend or adapt imaging when real-time findings justify it and policy permits
B. stop after the minimum images regardless of findings in the stated examination setting
C. change patient identity to match an order in the stated examination setting
D. omit the symptomatic side in the stated examination setting

160. A vascular technologist reviews findings related to preliminary findings. Which interpretation is most appropriate?

A. issue an independent final physician diagnosis
B. communicate within scope and according to laboratory policy
C. withhold critical observations in the stated examination setting
D. alter images after interpretation in the stated examination setting

161. A vascular technologist reviews findings related to prior intervention review. Which interpretation is most appropriate?

A. assume standard anatomy after surgery in the stated examination setting
B. ignore graft orientation in the stated examination setting
C. read the operative or procedural report before scanning when available
D. use native-vessel criteria without context in the stated examination setting

162. A vascular technologist reviews findings related to patient identification. Which interpretation is most appropriate?

A. use room number alone
B. ask another patient to confirm
C. identify only after scanning
D. use two approved identifiers before the examination

163. A vascular technologist reviews findings related to image archiving. Which interpretation is most appropriate?

A. save only one representative image in the stated examination setting
B. delete technically difficult segments in the stated examination setting
C. verify required images, labels, measurements, and waveforms are stored
D. archive without patient identifiers in the stated examination setting

164. A vascular technologist reviews findings related to medication history. Which interpretation is most appropriate?

A. recognize that vasoactive and anticoagulant drugs may affect context and risk
B. stop prescribed medications independently in the stated examination setting
C. ignore anticoagulation before procedures in the stated examination setting
D. diagnose stenosis from medication list in the stated examination setting

165. A vascular technologist reviews findings related to focused vascular history. Which interpretation is most appropriate?

A. record only the appointment time in the stated examination setting
B. omit prior imaging and surgery in the stated examination setting
C. ask only about allergies in the stated examination setting
D. document symptoms, onset, laterality, interventions, medications, and risk factors

166. A vascular technologist reviews findings related to patient positioning. Which interpretation is most appropriate?

A. force every patient into one standard position
B. adapt safely to symptoms, mobility, and hemodynamic effects
C. ignore orthostatic symptoms in the stated examination setting
D. stand an unstable patient alone

167. A vascular technologist reviews findings related to professional communication. Which interpretation is most appropriate?

A. use ambiguous shorthand without definitions
B. discuss results publicly in the stated examination setting
C. use objective terminology and avoid unsupported conclusions
D. document opinions as confirmed diagnoses

168. A vascular technologist reviews findings related to abdominal vascular preparation. Which interpretation is most appropriate?

A. require prolonged fasting for every emergency
B. encourage a large meal immediately before
C. omit medication review in the stated examination setting
D. follow laboratory fasting instructions when clinically appropriate

169. A vascular technologist reviews findings related to critical finding communication. Which interpretation is most appropriate?

A. wait for routine report distribution in the stated examination setting
B. notify the designated clinician promptly and document the exchange
C. tell family members without permission in the stated examination setting
D. leave before confirming receipt in the stated examination setting

170. A vascular technologist reviews findings related to unexpected incidental finding. Which interpretation is most appropriate?

A. document and communicate it according to laboratory policy
B. delete the image because it is outside the order
C. provide a definitive unrelated diagnosis
D. ignore any potentially important mass

Practice Exam 17: Answer Key and Explanations

1. A — Normal vertebral arterial flow is antegrade, traveling cranially through the transverse foramina toward the basilar circulation. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

2. B — The kidneys require continuous perfusion, so normal renal arteries display low resistance and sustained forward flow during diastole. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

3. A — At the groin, the common femoral vein usually lies medial to the common femoral artery, a useful orientation landmark. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

4. B — The common carotid supplies both external and internal carotid beds, so its normal waveform has an intermediate-to-low resistance pattern with forward diastolic flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation.

5. C — Normal peripheral venous flow varies with respiration and increases with distal augmentation, demonstrating patency between the compression site and sample location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

6. D — During fasting, the superior mesenteric circulation has relatively high resistance; after eating, diastolic flow rises as bowel perfusion increases. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

7. B — The common femoral artery divides into the superficial femoral artery and the profunda femoris artery in the proximal thigh. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

8. C — The internal carotid supplies the brain, a continuously perfused low-resistance vascular bed, so forward diastolic flow is normally prominent. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

9. D — Hepatic venous waveforms are characteristically pulsatile and multiphasic because right atrial pressure changes are transmitted into the hepatic veins. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

10. A — The small saphenous vein usually ascends in the posterior calf and commonly drains near the popliteal fossa. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

11. A — The distal abdominal aorta bifurcates into the right and left common iliac arteries, typically near the fourth lumbar vertebral level. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

12. B — A healthy resting limb has high peripheral resistance and elastic recoil, producing forward systole, brief early-diastolic reversal, and late forward flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

13. D — The celiac artery supplies the liver and spleen, which maintain low-resistance circulation even during fasting. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

14. C — The brachial artery divides near the antecubital fossa into the radial and ulnar arteries supplying the forearm and hand. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

15. B — The external carotid supplies muscular and facial beds, producing a higher-resistance waveform than the internal carotid artery. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel,

mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

16. C — Normal portal venous flow is hepatopetal, carrying nutrient-rich blood from the gastrointestinal tract and spleen toward the liver. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

17. D — The great saphenous vein courses in the superficial saphenous compartment and is commonly followed along the medial leg and thigh. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

18. A — The popliteal artery first gives rise to the anterior tibial artery and then continues as the tibioperoneal trunk. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

19. D — Normal vertebral arterial flow is antegrade, traveling cranially through the transverse foramina toward the basilar circulation. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

20. C — The kidneys require continuous perfusion, so normal renal arteries display low resistance and sustained forward flow during diastole. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

21. B — At the groin, the common femoral vein usually lies medial to the common femoral artery, a useful orientation landmark. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

22. A — The common carotid supplies both external and internal carotid beds, so its normal waveform has an intermediate-to-low resistance pattern with forward diastolic flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation.

23. A — Normal peripheral venous flow varies with respiration and increases with distal augmentation, demonstrating patency between the compression site and sample location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

24. B — During fasting, the superior mesenteric circulation has relatively high resistance; after eating, diastolic flow rises as bowel perfusion increases. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

25. D — The common femoral artery divides into the superficial femoral artery and the profunda femoris artery in the proximal thigh. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

26. C — The internal carotid supplies the brain, a continuously perfused low-resistance vascular bed, so forward diastolic flow is normally prominent. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

27. B — Hepatic venous waveforms are characteristically pulsatile and multiphasic because right atrial pressure changes are transmitted into the hepatic veins. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

28. C — The small saphenous vein usually ascends in the posterior calf and commonly drains near the popliteal fossa. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

29. A — The distal abdominal aorta bifurcates into the right and left common iliac arteries, typically near the fourth lumbar vertebral level. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

30. D — A healthy resting limb has high peripheral resistance and elastic recoil, producing forward systole, brief early-diastolic reversal, and late forward flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives

describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

31. B — The celiac artery supplies the liver and spleen, which maintain low-resistance circulation even during fasting. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

32. D — The brachial artery divides near the antecubital fossa into the radial and ulnar arteries supplying the forearm and hand. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

33. C — The external carotid supplies muscular and facial beds, producing a higher-resistance waveform than the internal carotid artery. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

34. A — Normal portal venous flow is hepatopetal, carrying nutrient-rich blood from the gastrointestinal tract and spleen toward the liver. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

35. D — The great saphenous vein courses in the superficial saphenous compartment and is commonly followed along the medial leg and thigh. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

36. A — The popliteal artery first gives rise to the anterior tibial artery and then continues as the tibioperoneal trunk. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

37. B — A pseudoaneurysm neck demonstrates blood entering the sac during systole and returning toward the artery during diastole, creating to-and-fro flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

38. C — A significant proximal obstruction dampens and delays the downstream systolic pressure wave, producing the tardus-parvus contour. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

39. B — Budd-Chiari syndrome results from obstruction of hepatic venous outflow involving hepatic veins, the inferior vena cava, or both. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

40. A — Chronic mesenteric arterial disease commonly causes postprandial pain because intestinal demand rises after eating but stenotic vessels cannot supply adequate flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

41. D — Continuous peripheral venous flow with loss of respiratory variation can indicate a more proximal obstruction between the sample and the heart. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

42. C — Chronic thrombosis commonly produces echogenic organized material, wall thickening, recanalized channels, collateral veins, and a smaller irregular lumen. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

43. D — A narrowing accelerates flow through the reduced lumen and commonly creates aliasing, turbulence, and spectral broadening at and beyond the lesion. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

44. C — Renal fibromuscular dysplasia classically affects the mid-to-distal artery and may create alternating narrowed and dilated segments rather than ostial plaque. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

45. B — May-Thurner syndrome involves compression of the left common iliac vein by the overlying right common iliac artery against the spine. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel,

mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

46. A — A Baker cyst is a fluid-filled popliteal lesion that can cause posterior knee pain or swelling and clinically resemble venous thrombosis. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

47. B — Dissection creates a tear and intimal flap that divides the aorta into true and false flow channels with potentially different Doppler characteristics. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with.

48. D — Swirling blood in a pseudoaneurysm sac often produces the characteristic red-and-blue yin-yang appearance on color Doppler. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

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57. A — Arterial thoracic outlet compression is dynamic; provocative arm positions may reduce subclavian flow, dampen the waveform, or reproduce symptoms. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

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artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

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62. B — A carotid body tumor is typically hypervascular and located at the bifurcation, where it separates or splays the internal and external carotid arteries. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation.

63. C — Aneurysm surveillance requires reproducible maximum diameter measurements perpendicular to the vessel axis, commonly from outer wall to outer wall. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

64. D — A pseudoaneurysm neck demonstrates blood entering the sac during systole and returning toward the artery during diastole, creating to-and-fro flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

65. A — A significant proximal obstruction dampens and delays the downstream systolic pressure wave, producing the tardus-parvus contour. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

66. B — Budd-Chiari syndrome results from obstruction of hepatic venous outflow involving hepatic veins, the inferior vena cava, or both. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

67. C — Chronic mesenteric arterial disease commonly causes postprandial pain because intestinal demand rises after eating but stenotic vessels cannot supply adequate flow. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

68. D — Continuous peripheral venous flow with loss of respiratory variation can indicate a more proximal obstruction between the sample and the heart. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

69. B — Chronic thrombosis commonly produces echogenic organized material, wall thickening, recanalized channels, collateral veins, and a smaller irregular lumen. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

70. A — A narrowing accelerates flow through the reduced lumen and commonly creates aliasing, turbulence, and spectral broadening at and beyond the lesion. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

71. B — Renal fibromuscular dysplasia classically affects the mid-to-distal artery and may create alternating narrowed and dilated segments rather than ostial plaque. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

72. D — May-Thurner syndrome involves compression of the left common iliac vein by the overlying right common iliac artery against the spine. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

73. A — A Baker cyst is a fluid-filled popliteal lesion that can cause posterior knee pain or swelling and clinically resemble venous thrombosis. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

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91. D — An endoleak is continued perfusion of the excluded aneurysm sac outside the endograft lumen and requires classification and surveillance. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

92. A — Unexpected perigraft fluid, gas, inflammatory change, or pseudoaneurysm can raise concern for infection when correlated with the clinical presentation. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

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101. A — Resistive index equals PSV minus EDV divided by PSV; using 110 and 22 produces 0.80. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

102. D — Temporary occlusion followed by release increases flow demand, allowing physiologic assessment of the limb's capacity to augment perfusion. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

103. B — Arterial obstruction progressively rounds and delays the PVR systolic upstroke while reducing amplitude and eliminating normal contour features. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

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describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

121. C — Completion duplex provides immediate hemodynamic and anatomic assessment so a correctable technical defect can be addressed before closure. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

122. A — A standardized timeout prevents wrong-patient, wrong-site, and wrong-procedure events and confirms team readiness before intervention. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

123. A — Ultrasound-guided compression targets the neck to interrupt sac inflow while preserving and repeatedly checking distal perfusion. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

124. B — Real-time visualization and a safe planned trajectory reduce unintended vascular injury during image-guided access or biopsy procedures. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

125. D — Needle conspicuity improves when the insonation geometry produces a stronger specular reflection and the needle remains within the imaging plane. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

126. C — A sterile cover, appropriate sterile gel, and careful cable management protect the procedural field while maintaining image quality. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

127. A — Patient safety takes priority; symptoms such as bradycardia, hypotension, pallor, or syncope require prompt assessment and team response. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

128. D — Ultrasound confirms intraluminal catheter position, safe distance from deep junctions, and circumferential tumescent coverage before energy delivery. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

129. B — Intraoperative carotid imaging can identify residual narrowing, intimal flap, thrombus, or abnormal flow that may require immediate revision. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

130. C — Continuous needle visualization and separation from the pseudoaneurysm neck reduce the risk of thrombin entering the native artery. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

131. B — After thrombin injection, ultrasound should document loss of sac flow while ensuring the native artery and distal circulation remain patent. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

132. A — Ultrasound distinguishes a simple hematoma from active bleeding, pseudoaneurysm, or arteriovenous fistula and helps guide escalation. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

133. D — Resistive index equals PSV minus EDV divided by PSV; using 110 and 22 produces 0.80. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

134. C — The resistive index normalizes the difference between systolic and diastolic velocities to peak systolic velocity and reflects downstream resistance. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

135. A — A strong specular reflector can redirect echoes and create an apparent duplicate structure at an incorrect deeper location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism,

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136. D — Critical findings require prompt communication through the approved chain, documentation of recipient and time, and confirmation that the message was understood. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

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142. B — The resistive index normalizes the difference between systolic and diastolic velocities to peak systolic velocity and reflects downstream resistance. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

143. C — A strong specular reflector can redirect echoes and create an apparent duplicate structure at an incorrect deeper location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

144. A — Critical findings require prompt communication through the approved chain, documentation of recipient and time, and confirmation that the message was understood. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

145. B — Resistive index equals PSV minus EDV divided by PSV; using 110 and 22 produces 0.80. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

146. D — The resistive index normalizes the difference between systolic and diastolic velocities to peak systolic velocity and reflects downstream resistance. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

147. D — A strong specular reflector can redirect echoes and create an apparent duplicate structure at an incorrect deeper location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

148. A — Critical findings require prompt communication through the approved chain, documentation of recipient and time, and confirmation that the message was understood. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

149. B — Resistive index equals PSV minus EDV divided by PSV; using 110 and 22 produces 0.80. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

150. C — The resistive index normalizes the difference between systolic and diastolic velocities to peak systolic velocity and reflects downstream resistance. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a

different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

151. B — A strong specular reflector can redirect echoes and create an apparent duplicate structure at an incorrect deeper location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

152. C — Critical findings require prompt communication through the approved chain, documentation of recipient and time, and confirmation that the message was understood. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

153. D — Resistive index equals PSV minus EDV divided by PSV; using 110 and 22 produces 0.80. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic.

154. A — The resistive index normalizes the difference between systolic and diastolic velocities to peak systolic velocity and reflects downstream resistance. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

155. A — A strong specular reflector can redirect echoes and create an apparent duplicate structure at an incorrect deeper location. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

156. D — Critical findings require prompt communication through the approved chain, documentation of recipient and time, and confirmation that the message was understood. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

157. C — Clear documentation identifies which segments were limited, why they were limited, and how diagnostic confidence was affected. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral.

158. B — A clear explanation improves cooperation and comfort while respecting the technologist's scope and the patient's right to ask questions or decline. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale.

159. A — Real-time findings may require additional views or segments, but modifications should remain clinically relevant, within protocol, and clearly documented. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

160. B — The technologist documents objective findings and communicates them through established policy while the authorized interpreting clinician provides the final interpretation. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging.

161. C — Procedural details identify conduit type, anastomoses, stents, treated segments, and expected anatomy, guiding a complete and accurate examination. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

162. D — Two independent approved identifiers reduce wrong-patient errors before imaging, procedures, documentation, or communication occurs. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler, physiologic data.

163. C — Complete, correctly labeled archives allow interpretation, comparison, quality review, and defensible documentation of the examination performed. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

164. A — Medication review provides clinical context, identifies bleeding or procedural considerations, and helps explain physiologic responses without authorizing medication changes. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

165. D — A focused history directs protocol selection, helps interpret hemodynamic findings, and identifies prior interventions or risks that alter technique. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives

describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

166. B — Position affects hydrostatic pressure, venous filling, access, and safety; the protocol should be adapted while documenting meaningful limitations. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow.

167. C — Objective, standardized language makes preliminary findings understandable and reduces ambiguity while protecting confidentiality and professional scope. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color flow, spectral Doppler.

168. D — Fasting can reduce bowel gas and postprandial mesenteric variation, but urgent examinations and patient safety may require protocol adaptation. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

169. B — Timely escalation of acute DVT, critical stenosis, aneurysm, or other urgent findings supports patient safety and continuity of care. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.

170. A — Potentially important incidental observations should be documented and escalated through policy so the interpreting clinician can determine appropriate follow-up. This is the single best choice because it integrates anatomy, hemodynamics, and standard vascular laboratory technique. The alternatives describe a different vessel, mechanism, artifact, or clinical response and therefore do not fit the stated finding. Correlation with grayscale imaging, color.