1. A cerebral arteriovenous ——— (AVM) is a vascular nidus made up of a core of entangled vessels fed by one or more enlarged arteries.
A malformation  B meningioma  C metastases  D myositis

2. ——— is the most efficient and effective way to assess a penetrating brain injury rapidly.
A MRI  B CT  C MRA  D General xray

3. ——— % of epidural hematomas cases are secondary to a direct laceration of the meningeal arteries by an overlying skull fracture.
A 45  B 58-67  C 70-75  D 80-90

4. Chiari malformations typically occur during ——— weeks of gestational life and are dorsal induction-neural tube defects.
A the 12th and 13th  B the last 5  C first 3 to 4  D the 20th and 21st

5. Elevation and thinning of the corpus callosum is present in more than ——— % of cases of hydrocephalus.
A 45  B 58-67  C 70-75  D 80-90

6. ———% of meningiomas undergo cystic or fatty degeneration.
A 25  B 5 to 10  C 35 to 40  D 55

7. ——— are the most common intracranial tumors in children, accounting for up to 50% of such neoplasms.
A Craniopharyngioma  B Brain stem gliomas  C Ependymomas  D Astrocytomas

8. A(n) ——— scan is the first imaging study for the emergent evaluation of acute stroke for several reasons.
A unenhanced head CT  B head CT with contrast  C MRI head  D MRA head

9. ———% of meningiomas undergo cystic or fatty degeneration.
A 25  B 5 to 10  C 35 to 40  D 55

10. The most common clinical presentation of acute subarachnoid hemorrhage is:
A dizziness  B an intense headache  C marked fatigue  D some loss of motor skills

11. Approximately 10% of ischemic strokes are preceded by a ——— ischemic attack (TIA).
A tertiary  B temporary  C transient  D traumatic

12. Regarding schwannomas of the intracranial compartment, cranial nerve ——— is most commonly involved.
A VI  B IV  C VIII  D III

13. The hyperacute intracerebral hemorrhage is ——— on T2W MR imaging.
A hypointense  B hyperintense  C isointense  D never detected well

14. On CT and MR imaging, arachnoid cysts usually follow the density or intensity of CSF, respectively.
A True  B False

15. The majority of retinoblastomas (98%) present before ——— years of age.
A 2  B 10  C 7  D 3

16. Subdural hematomas do not spread across the midline because they are confined by the:
A arachnoid granulation  B sagittal sulcus  C frontal crest  D falx

17. Lacunar infarcts tend to occur in the upper half of the ———, whereas perivascular spaces occur along the inferior half.
A hippocampus  B caudate  C putamen  D internal capsule

18. Approximately ———% of neurologic developmental delays can be attributed to non-accidental (abuse) trauma.
A 3  B 5  C 7  D 10

19. ——— carcinoma is the most common cause of blastic metastases in men.
A Colon  B Pancreas  C Prostate  D Lung
20. By definition, a giant aneurysm has a maximal diameter larger than ________ cm.
   A 2.5      B 4      C 1.5      D 3
   CASE: 34

21. The appearance of blood products on MR imaging is dependent, most importantly, the ________ at the time of imaging.
   A structure of hemoglobin     B plasma content     C red cell content     D white cell content
   CASE: 35

22. The most common cause of an extra-axial neoplasm in adults is meningioma.
   A True     B False
   CASE: 36

23. Amyloid angiopathy is usually seen in patients older than ________ years of age, and is a diagnosis of exclusion.
   A 30      B 40      C 50      D 60
   CASE: 39

24. Approximately ________% of patients with nontraumatic subarachnoid hemorrhage will have negative angiograms.
   A 5 to 7      B 10 to 15      C 18 to 23      D 30
   CASE: 40

25. ________ imaging is the most sensitive imaging modality for the detection and evaluation of diffuse axonal injury.
   A CT      B MR      C US      D Nuclear medicine
   CASE: 41

26. Most GBMs (glioblastoma ________) enhance and usually demonstrate heterogeneity because of the presence of necrosis or hemorrhage.
   A melanosis      B multifomme      C myositis      D methemoglobin
   CASE: 42

27. ________ lobe epilepsy is the most common epilepsy syndrome in adults.
   A Parietal      B Occipital      C Frontal      D Temporal
   CASE: 44

28. The typical imaging appearance of a germinoma on unenhanced CT is:
   A a hypodense mass      B almost undetectable      C a hyperdense mass      D a heterogenous mass
   CASE: 46

29. Herpes simplex virus ________ is responsible for neonatal infection.
   A type I      B type II      C (cold sore herpes)      D (oral herpes)
   CASE: 48

30. Approximately ________% of patients with tuberculosis go on to have CNS disease.
   A 2      B 5 to 10      C 23      D 29 to 34
   CASE: 50

31. The most common neoplasm associated with purely dural metastases is ________ carcinoma.
   A breast      B pancreas      C lung      D colon
   CASE: 51

32. ________ MR imaging is particularly useful in distinguishing intrinsic aqueductal abnormalities from extrinsic mass compression.
   A Coronal      B Sagittal      C Axial      D Angiographic
   CASE: 52

33. In patients with their first episode of optic neuritis, up to ________% have asymptomatic cerebral white matter lesions on brain MR study.
   A 24      B 36      C 51      D 65
   CASE: 54

34. More than ________% of developmental venous malformations are asymptomatic; however, rarely, these lesions may hemorrhage.
   A 75      B 62      C 99      D 87
   CASE: 56

35. Approximately ________% of patients with pyogenic bacterial meningitis will have complications necessitating neurosurgical intervention.
   A 20      B 34      C 2      D 7
   CASE: 57

36. The more common differential diagnosis of an infundibular lesion in adults includes granulomatous disease and:
   A metastasis      B lymphoma      C hypothalamic glioma      D viral infection
   CASE: 58

37. Dysplastic gangliocytomas present on CT as a(n) ________ mass.
   A elongated      B mildly hyperdense      C mildly hypodense      D strongly hyperdense
   CASE: 59

38. Typically presenting in the ________ decades of life, sarcoidosis is slightly more common in women than in men.
   A 1st and 2nd      B 3rd and 4th      C 5th and 6th      D 7th and 8th
   CASE: 60

39. The presence of additional lesions separate from the mass points more toward a demyelinating disease versus a glioma.
   A True      B False
   CASE: 61

40. ________% of patients with nontraumatic subarachnoid hemorrhage will have negative angiograms.
   A 5 to 7      B 10 to 15      C 18 to 23      D 30
   CASE: 41

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   CASE: 51

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   A metastasis      B lymphoma      C hypothalamic glioma      D viral infection
   CASE: 58

51. The presence of additional lesions separate from the mass points more toward a demyelinating disease versus a glioma.
   A True     B False
   CASE: 61
40. □ are circumscribed lesions that follow the signal characteristics of CSF on all MR pulse sequences (T1W, FLAIR, T2W).
   A Arachnoid cysts  B Cerebral infarcts  C Alzheimer’s disease lesions  D Parkinson’s disease lesions

41. Regarding cavernous malformations, approximately □% of patients have multiple lesions.
   A 5  B 12  C 18  D 25

42. □ cysts are benign masses typically located in the superior aspect of the anterior 3rd ventricle between the columns of the fornices.
   A Pineal  B Epidermoid  C Colloid  D Rathke’s cleft

43. Toxoplasma can be transmitted through raw meat, milk, blood products, and cat feces, and by in utero exposure.
   A True  B False

44. A combination of imaging modalities, including □, CT, and MR, can be used to assess CSF leaks and meningoencephaloceles.
   A US  B general xray  C PET  D nuclear scintigraphy

45. White matter tractography based on diffusion tensor imaging is a(n) □ that can depict white matter tracts in the brain in vivo.
   A MR technique  B CT technique  C US technique  D nuclear medicine

46. Intracranial aneurysms are multiple in approximately □% of cases.
   A 10  B 20  C 30  D 40

47. When neural elements make up the majority of a ganglioglioma, the neoplasm is referred to as a:
   A gangleuron  B cerebroganglion  C ganglioneuroma  D neuroganglion

48. In □, there is a malformation in the normal process of bone remodeling.
   A osteitis fibrosa  B Klippel-Feil syndrome  C Paget’s disease  D hypophosphatasia

49. Regarding lateral medullary syndrome, symptoms may include ataxia, cranial nerve □ neuropathies, nystagmus, and vertigo.
   A III and IV  B V and VI  C IX and X  D I and II

50. Wallerian degeneration is a secondary manifestation of □ injury from a spectrum of causes.
   A neck  B brain  C spinal cord  D back

51. Thyroid ophthalmopathy is more common in women by a ratio of □ and is frequently asymptomatic.
   A 2:1  B 3:1  C 4:1  D 5:1

52. □, arachnoid cysts are isodense to CSF on CT.
   A Seldom  B Usually  C In every case  D In about 2% of cases

53. Only in very rare instances, patients with multiple cavernomas have lesions too numerous to count.
   A True  B False

54. Subependymal nodules are seen in essentially all patients with tuberous sclerosis, and more than □% are calcified.
   A 75  B 24  C 87  D 10

55. Isolated premature closure of the sagittal suture is most common, occurring in more than □% of cases of craniosynostosis.
   A 50  B 70  C 60  D 80

56. Chiari □ malformation is a congenital anomaly that is usually associated with “beaking” of the tectum.
   A II  B I  C IV  D III

57. The most common location of calvarial epidermoid cysts is in the □ bone.
   A frontal  B temporal  C occipital  D parietal

58. Heterotopias appear as masses that are □ to gray matter on all pulse sequences and do not enhance.
   A hyperintense  B mildly hypointense  C strongly hypointense  D isointense

59. □ hemangioblastomas are benign neoplasms that represent the most common primary infratentorial neoplasm in adults.
   A Pons  B Spinal  C Cerebellar  D Midbrain
60. Conventional ______ is still best for showing the changes of vasculitis in the cerebral arteries.
   A CTA          B MR          C catheter angiography        D MRA
   CASE: 100

61. On CT, ______% of optic nerve meningiomas have calcification along the nerve sheath.
   A 2   B 7   C 20 to 50   D 74 to 80
   CASE: 101

62. Up to ______% of people have calcification in the pineal gland by adolescence.
   A 17   B 10   C 26   D 38
   CASE: 102

63. On CTV (computed tomography——) thrombosis is readily identified as filling defects in the affected venous sinuses.
   A venography   B visualization          C vein imaging          D ventricle imaging
   CASE: 104

64. Approximately ______% of pituitary adenomas present as a result of endocrine dysfunction.
   A 25   B 50   C 75   D 98
   CASE: 108

65. ______ is a systemic disorder characterized pathologically by noncaseating granulomas.
   A Systemic scleroderma   B Rheumatoid arthritis          C Sarcoidosis          D Diabetes mellitus
   CASE: 109

66. NPH (—— pressure hydrocephalus), a form of communicating hydrocephalus, is characterized by normal mean CSF pressure.
   A neuroblastoma   B necrotic   C normal   D negative
   CASE: 110

67. Intracranial lipomas occur in the suprasellar cistern about ______% of the time.
   A 50   B 25   C 10   D 15
   CASE: 112

68. Saccular aneurysms account for ______% of spontaneous subarachnoid hemorrhages.
   A 70 to 80   B 45   C 32   D 10 to 14
   CASE: 114

69. The typical interval between gadolinium injection for MR imaging and the onset of symptoms of NSF is ______ weeks.
   A 1   B 2 to 8   C 10   D 12 to 14
   CASE: 116

70. ______ refers to slow, progressive occlusive disease of the distal intracranial internal carotid arteries and its proximal branches.
   A Thrombosis   B DVT   C Moyamoya   D Amyloid angiopathy
   CASE: 118

71. In cases of acute sinusitis, an air-fluid level or sinus opacification is present in more than ______% of cases.
   A 8   B 50   C 18   D 27
   CASE: 119

72. Mucoceles are common in the posterior ethmoid and sphenoid sinuses.
   A True   B False
   CASE: 120

73. Patients with spontaneous intracranial hypotension typically present with ______ that are frequently postural in nature.
   A back aches   B leg aches   C abdominal aches   D head aches
   CASE: 122

74. Fahr disease carries with it neurological manifestations such as athetosis, which is:
   A slow, involuntary movements   B speaking in nonsensical terms   C quick, jerky movements   D slow speech
   CASE: 123

75. CNS lymphoma is most commonly seen in ______ patients.
   A Alzheimer’s   B speech-deficit   C motor-skill deficit   D immunocompromised
   CASE: 124

76. Each year, 1 in ______ people is diagnosed with dementia.
   A 5,000   B 500   C 50,000   D 50
   CASE: 127

77. Regarding acute toxic demyelination, initial imaging shows characteristic signal abnormality in the ______ on the FLAIR image.
   A bilateral globus pallidus   B cerebellum   C putamen   D basal ganglia
   CASE: 128

78. Regarding neurofibromatosis type 1, ______ imaging is the best choice for assessing the extent of the tumors.
   A CT   B US   C MR   D nuclear medicine
   CASE: 130

79. Patients with nonaneurysmal perimesencephalic subarachnoid hemorrhage generally have an excellent prognosis.
   A True   B False
   CASE: 130
80. After radiation therapy for nasopharyngeal cancer, radiation necrosis typically shows ______ activity on positron emission tomography.
A normal tissue  B minor increased  C reduced  D major increased

CASE 132

81. The most common complication of vascular dissection is ______ disease that may occur days to weeks after the dissection.
A thromboembolic  B vibrio  C hemophilia  D hemochromatosis

CASE 133

82. The term ______ pneumocephalus describes the situation in which there are neurologic symptoms due to intracranial air — and pressure.
A pressure  B tension  C building  D spontaneous

CASE 134

83. Contrast-enhanced CT is insensitive for the detection of leptomeningeal spread.
A True  B False

CASE 136

84. Venous thrombosis is underdiagnosed because of lack of:
A adequate testing capabilities  B knowledge for its assessment  C consideration  D adequate funds to do so

CASE 138

85. Cholesterol granulomas, also known as blue-domed or ______ cysts, typically arise in the petrous apex.
A brown  B azure  C chocolate  D blue mountain

CASE 140

86. Hamartomas are benign nonneoplastic lesions that are likely:
A congenital  B viral-related  C bacterial-related  D toxic-induced changes

CASE 141

87. ______ carcinoma is the most common neoplasm associated with dural metastases.
A Prostate  B Colon  C Lung  D Breast

CASE 143

88. Regarding the presentation of chordomas on CT, calcification is seen in ______% of cases.
A 14  B 27  C 41  D 50

CASE 145

89. Regarding Lyme disease, Stage II is characterized by:
A the bull’s-eye skin lesion  B neurologic symptoms  C rheumatologic symptoms  D disseminated infection

CASE 148

90. ______ is the most common extracranial pediatric solid tumor and the most common neoplasm in infancy.
A Neuroblastoma  B Craniopharyngioma  C Pineal tumor  D Ependymoma

CASE 150

91. In the acute setting of global hypoxic-ischemic injury on MR imaging, T2W hyperintensity may be seen in the:
A peripheral cortex  B watershed territories  C midbrain  D temporal lobes only

CASE 152

92. The onset of symptoms in Olivopontocerebellar ______ (OPCD) may span several decades.
A diffusion  B dysplasia  C degeneration  D demyelination

CASE 154

93. Generally, Huntington’s disease is progressive, with death occurring ______ years after its onset.
A around 5  B 7 to 12  C 15 to 20  D 2

CASE 156

94. Features on conventional MR associated with higher-grade gliomas include necrosis, enhancement, hemorrhage, and marked:
A focal hypodensities  B focal hyperdensities  C regional effacement  D mass effect

CASE 157

95. “Tumefactive” multiple sclerosis, high-grade glioma (GBM), and occasionally an abscess can appear similar on imaging.
A True  B False

CASE 158

96. Regarding Adrenoleukodystrophy, boys typically present between the ages of:
A 2 and 4  B 4 and 10  C 10 and 13  D 13 and 16

CASE 161

97. Cytomegalovirus is present in the latent form in ______ of the American population.
A 20%  B 29 to 35%  C the majority  D 40 to 44%

CASE 162

98. Cavernous malformations may be present in up to ______% of the population.
A 5  B 21  C 30  D 50

CASE 164

99. On CT and MRI imaging, neurocytomas typically are heterogeneous masses that contain:
A singular cysts  B no cysts  C focal hyperdensities  D multiple cysts
100. The most common location for orbital metastases is the globe, usually involving the region of the choroid and:
A sclera B retina C ciliary muscle D fovea

101. On unenhanced T1W images, yellow marrow approaches the intensity of:
A muscle B bone C subcutaneous fat D water

102. _______ patients are at increased risk for herpes zoster infection.
A Female (over 40) B Asian descent C Immunosuppressed D Male (under 30)

103. Regarding Jakob-Creutzfeldt disease, CT may show no abnormality; however, _______ is the next most common presentation.
A sulcal effacement B unexplained mass effect C acute hemorrhage D atrophy

104. An example of a vascular neoplasm that is almost exclusively seen in infancy is:
A lymphangioma B capillary hemangioma C cavernous hemangioma D paraganglioma

105. Focal neurologic deficits _______ in the course of gliomatosis cerebri.
A occur late B occur initially C never occur D occur midpoint

106. CNS tumors are present in about _______% of patients with neurofibromatosis type 2.
A 25 B 50 C 75 D 100

107. On CT, ocular melanomas are typically _______ relative to the vitreous and enhance after contrast.
A slightly hypodense B isointense C hyperdense D strongly hypodense

108. Amyotrophic lateral sclerosis is also known as:
A Lou Gehrig’s disease B Cento’s disease C Bondanella’s disease D Redman’s disease

109. Regarding the presentation of Wilson’s disease on MR imaging, the most common finding may be:
A atrophy B acute hemorrhage C unexplained mass effect D sulcal effacement

110. The first-line imaging modality in the evaluation of suspected nontraumatic subarachnoid hemorrhage is:
A CT with contrast B unenhanced CT C MRA D US

111. Of the dural venous sinuses, DAVMs most commonly involve the sigmoid and _______ sinuses.
A occipital B straight C transverse D superior sagittal sinus

112. Wernicke encephalopathy is related to thiamine deficiency and is found most commonly in:
A diabetic patients B Asian descent patients C hypertensive patients D chronic alcoholism

113. Up to _______% of patients with acute subarachnoid hemorrhage die before reaching the hospital.
A 3 B 7 C 10 D 15

114. Patients with osmotic demyelination typically have a history of alcoholism and:
A chronic viral infections B diabetes C malnourishment D dehydration

115. Approximately _______% of patients with brain metastases have isolated lesions on imaging.
A 10 to 15 B 30 to 50 C 2 to 4 D 25

116. Rhombencephalosynapsis is an anomaly of the _______ that is agenetic or hypoplastic.
A cerebellar vermis B cerebellar horizontal fissure C cerebellar posterior lobe D cerebellar primary fissure

117. Before the AIDS epidemic, _______ multifocal leukoencephalopathy (PML) was largely seen in an array of immunocompromised patients.
A pineal B pituitary C penumbra D progressive

118. Chronic progressive _______ ophthalmoplegia (CPEO) is a disorder characterized by slowly progressive paralysis in extraocular muscles.
A external B empyema C embolism D epidural

119. The hallmark lesion of von Hippel-Lindau disease is the:
A hemangioblastoma B paraganglioma C cavernous hemangioma D lymphangioma

120. In von Hippel-Lindau disease, CNS hemangioblastomas are multiple in at least _______% of cases.
A 10 B 20 C 30 D 40
Fill in each blank. There are two options to submit the post-test.

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