

**SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES
& TECHNOLOGY, THIRUVANANTHAPURAM – 695 011**

ENTRANCE TEST : ACADEMIC SESSION 2017

DM – NEUROIMAGING & INTERVENTIONAL NEURORADIOLOGY
& PDC - Diagnostic Neuroradiology

Time : 90 Mts

Max. marks : 100

(Select the most appropriate answer)

1. K-space manipulation in MRI denotes
 - a. Manipulation of image contrast
 - b. Gradient manipulation
 - c. Manipulation of the RF pulse
 - d. Manipulation of Fourier image transforms

2. Oxyhemoglobin in MRI is represented by
 - a. Hypointense in T1 and T2
 - b. Hyperintense in T1 and T2
 - c. Isointense in T1 and hyperintense in T2
 - d. Hyperintense in T1 and hypointense in T2

3. Who is the pioneer in percutaneous transluminal angioplasty
 - a. Evan Seldinger
 - b. Charles Dotter
 - c. Marvin Judkins
 - d. Andreas Gruntzig

4. Kerley's lines are visible in which of the following conditions
 - a. Mitral stenosis
 - b. Reticulosis
 - c. Coal workers Pneumoconiosis
 - d. All of the above

5. Pseudoarthrosis is not seen in
 - a. Fibrous dysplasia
 - b. Cleidocranial dysplasia
 - c. Neurofibromatosis
 - d. Down's syndrome

6. Sclerotic metastases are not produced by which of the following primary malignancies
- Bronchogenic carcinoma
 - Carcinoid
 - Breast
 - None of the above
7. Histiocytosis X is characterized by
- Hilar adenopathy
 - Pleural involvement
 - Nodular pulmonary opacities
 - Pneumothorax
8. Angiographic sylvian point in AP view of the skull measures
- 10-15 mm from inner table
 - 20-30 mm from outer table.
 - 12-16 mm from the outer table
 - 30-40 mm from the inner table
9. Bulls angle is measures between
- Nasion –basion line and Mc-Rae's line
 - Clival line and Stockholm line.
 - Clinoparietal line and bimaistoid line
 - None of the above
10. Ratio of the exposure with grid to the exposure without grid is known as
- Grid efficiency
 - Grid factor
 - Grid ratio
 - None of the above
11. Best investigation for the early detection of DVT is
- Venography
 - Computed tomography
 - Isotope scanning
 - Colour Doppler with compression

12. Hyperechoic hepatic metastasis are common in the following primary malignancy EXCEPT

- a. Pancreas
- b. Carcinoid
- c. Bladder
- d. Colon

13. Selective pulmonary arteriography is absolutely contraindicated in

- a. Severe pulmonary valvar stenosis
- b. Primary pulmonary hypertension
- c. Total anomalous pulmonary venous drainage
- d. Ostium primum defect

14. Which of the following is true for the Trigeminal nerve

- a. Gasserian ganglion has cell bodies of all sensory fibres
- b. Has four nuclei
- c. All of the above
- d. None of the above

15. For enteroclysis the catheter tip has to be placed at

- a. pyloric antrum
- b. Duodenal cap
- c. Horizontal segment of the duodenum
- d. distal to duodeno- jejunal junction

16. Magnetic field strength used for clinical studies is

- a. 1 Tesla
- b. 10 tesla
- c. 5 tesla
- d. none of the above

17. The most sensitive examination for disc prolapse is

- a. CT myelography
- b. Myelography with flexion and extension views
- c. MRI
- d. Lumbar Venography

18. Soft tissue injuries to knee joint are better evaluated by
- Arthrography
 - MRI
 - High resolution CT scans
 - CT arthrography
19. Hysterosalpinography is contraindicated in all of the following except
- Pregnancy
 - Recent pelvic infection
 - Sensitive to contrast media
 - Recurrent abortion
20. Yo-Yo reflux is seen in
- Malrotated kidney
 - Ureteric duplication
 - Ureterocele
 - Ectopic kidney
21. Osteoid osteoma is characterized by the following except
- When spine is involved it is almost always situated in the neural arch
 - Pain usually occurs at night
 - Pain is not relieved by aspirin
 - Frequently the children may be referred to psychiatrists
22. For staging of a patient with renal cell carcinoma the ideal examination would be
- IVP
 - Ultrasound
 - CT scan
 - Radionuclide scan
23. STIR sequence in MRI is used to get
- Good T1 contrast
 - Good T2 Contrast
 - Good fat suppression
 - Good T2 contrast and fat suppression

24. Following are not the branches of axillary artery.

- a. Lateral thoracic
- b. Medial thoracic
- c. Superior thoracic
- d. Posterior circumflex humeral

25. Which of the following is not a possible CNS manifestation of tuberculosis

- a. Raised intracranial pressure
- b. Basal exudates
- c. Plaque lesions
- d. None of the above

26. The most sensitive X- ray in a patient with suspected perforation would be

- a. AP abdomen with patient in erect position
- b. AP abdomen with patient in decubitus position
- c. AP abdomen with patient supine
- d. None of the above

27. Metacarpal index is to establish the diagnosis of

- a. Radioulnar dislocation
- b. Lunatic dislocation
- c. Marfan syndrome
- d. Syphilitic osteopathy

28. Detection of gas in the portal vein is pathognomonic of

- a. Choledochoduodenal fistula
- b. Gall stone ileus
- c. Liver abscess
- d. Gangrene of the bowel

29. Most common cause of an abdominal mass in an infant is

- a. Multicystic kidney
- b. Neuroblastoma
- c. Wilm's tumor
- d. Polycystic kidney

30. Which of the following is not a cause of distal oesophageal stricture
- Candida oesophagitis
 - Zollinger Ellison syndrome
 - Prolonged nasogastric intubation
 - Endoscopic sclerotherapy
31. Ratio of the difference in peak systolic velocity and end diastolic velocity to the mean velocity in Doppler ultrasound is represented as
- Pulsatility index
 - Resistive index
 - Systolic-diastolic ratio
 - None of the above
32. Partial airway obstruction is evidenced by
- Elevated diaphragm
 - Cyanosis
 - Right atrial enlargement
 - Enlarged azygous vein
33. Hypertrophic pulmonary osteoarthropathy results in
- Corpulmonale
 - Calcification in lung parenchyma
 - Ossified lung parenchyma
 - None of the above
34. The highest incidence of right aortic arch is associated with which of the following anomalies
- Truncus arteriosus
 - Tetralogy of Fallot
 - Pentalogy of Cantrell
 - Transposition of great arteries
35. The commonest location of an intracranial berry aneurysm is
- Anterior communicating artery
 - PCA
 - ICA
 - Basilar bifurcation

36. McLeod syndrome is diagnosed by
- Congenital absence of pericardium
 - Pulmonary infarction associated with abscess
 - Idiopathic pulmonary hypertension
 - Hyperlucent lung without increase in volume
37. Upper lobe blood diversion does not occur in
- Mitral stenosis
 - Pulmonary arterial hypertension
 - Basal bronchiectasis
 - Pulmonary hypertension
38. Budd-Chiari syndrome is a result of
- Obstruction of hepatic vein
 - Obstruction of portal vein
 - Obstruction of CBD at porta
 - Obstruction of CBD at the ampulla
39. Soap bubble appearance on a contrast lymphography is suggestive of
- Filarial lymphadenitis
 - Metastasis
 - Hodgkin's lymphoma
 - Non Hodgkin's lymphoma
40. _____ in the tungsten target reduces pitting and cracking
- Molybdenum
 - Rhenium
 - Copper
 - Aluminium
41. Chordoma is a tumor of
- Notochord
 - Spinal cord
 - Umbilical cord
 - Parasympathetic cord

42. The magnification factor of a radiographic image is determined by
- Focus object distance/ object film distance
 - Focus film distance/ object film distance
 - Focus object distance/ focus film distance
 - Object film distance/ focus film distance
43. Interlobar effusion are most commonly associated with
- Pericarditis
 - Tuberculosis
 - Congestive cardiac failure
 - Pleural mesothelioma
44. Sensitivity of CT in predicting lymph node metastasis in carcinoma stomach is approximately
- 20 %
 - 85 %
 - 40 %
 - 60 %
45. Rectifiers are used in the
- Secondary circuits of the high-tension transformer
 - Secondary circuits of the autotransformer
 - Primary circuits of the high-tension transformer
 - Primary circuit of the autotransformer
46. Space charge compensation is for
- Keeping the mAS steady, whatever the KV selected
 - Keeping the KV steady, whatever the mA selected
 - Keeping the tube current steady
 - Keeping the exposure time steady
47. Internal hernia at small bowel is common at
- Ileo-coecal junction
 - Para duodenal region.
 - Left hypochondrium
 - Umbilical region

48. Nephroptosis is characterized by

- a. Predilection for obese male
- b. Abnormal descent of kidneys in the erect posture
- c. Normal axis of kidneys
- d. All of the above

49. Erosion of the outer end of the clavicle is not seen in

- a. Metastasis
- b. Trauma
- c. Cretinism
- d. Multiple myeloma

50. Organs with a dual arterial blood supply

- a. Lung
- b. Brain
- c. Pancreas
- d. Kidney

51. Which of the following is NOT associated with hyperintense signal in T1 weighted imaging:

- a. melanin
- b. lipoma
- c. high protein content
- d. water

52. Horseshoe or boomerang configuration of the brain is seen in :

- a. alobar holoprosencephaly
- b. semilobar holoprosencephaly
- c. lobar holoprosencephaly
- d. all the above

53. Which of the following is NOT a good estimate of basilar impression?

- a. Chamberlain's line
- b. Bull's angle
- c. Bimastoid line
- d. Basal angle

54. Regarding acoustic neuromas, which is wrong?
- A majority arise from the vestibular division of eighth nerve.
 - Cystic degeneration is common.
 - Most acoustic neuromas arise within the lumen of the internal auditory canal
 - Early involvement of the adjacent facial nerve is common.
55. The most common acute CT finding in the head of an abused child is:
- skull fracture
 - acute interhemispheric subdural hematoma
 - Infact
 - posterior fossa subdural hematoma
56. The Law, Stenvers and Owen radiographic projections are used to demonstrate
- facial structures
 - lateral ventricles in pneumoencephalography
 - temporal bone
 - atlanto – occipital articulation
57. On the usual CT scale (Hounsfield units) of densities, brain tissue would be expected to measure:
- 100 to -50
 - 10 to +15
 - +80 to +110
 - +20 to +45
58. All the following bones in the adult skull has a membranous origin except
- Nasal
 - Parietal
 - Maxilla
 - Ethmoid
59. Which is the following is NOT associated with nasal septal destruction?
- Midline lethal granuloma
 - Squamous cell carcinoma
 - Cocaine abuse
 - Osteomata

60. Which of the following statements is correct?

- a. The axial plane for CT is usually a line tangential to the orbital roofs running to the anterior margin of the foramen magnum
- b. Mechanism of contrast enhancement after gadolinium DTPA in MRI is similar to iodinated contrast medium in CT.
- c. Rapidly flowing blood is bright in T1 weighted MRI.
- d. Time of flight MR angiography is an invasive procedure.

61. The following give rise to lucencies within the skull vault on skull radiographs

- a. Sutures
- b. Pineal gland
- c. Choroid plexus
- d. Dura

62. The following give rise to calcifications within the vault in skull radiographs:

- a. Vascular impressions
- b. Pacchionian depression
- c. Habenular commissure
- d. Parietal foramina

63. The MR imaging in multiple sclerosis will show lesions in:

- a. Middle cerebellar peduncle and corpus callosum
- b. Frontal and parietal gray matter
- c. Thalamus and substantia nigra
- d. Putamen and caudate nucleus

64. The MRI technique used to understand the functions of the human brain is done using the principle of:

- a. Diffusion tensor imaging
- b. Blood oxygen level dependent imaging
- c. Magnetisation transfer imaging
- d. MR spectroscopy

65. Cardiorespiratory control is partially conveyed by the

- a. Nucleus ambiguus
- b. Nucleus solitarius
- c. Pontine reticular nuclei
- d. Restiform body

66. Noradrenergic innervations to most of the nervous system is provided by the

- a. Substantia nigra
- b. Locus ceruleus
- c. Dorsal raphe nucleus
- d. Red nucleus

67. A waddling gait is seen with

- a. Cerebellar lesions
- b. An acute vestibular lesion
- c. Guillain- Barre syndrome
- d. Hip muscles weakness

68. The cerebellar cortex contains

- a. Pyramidal cells
- b. Purkinje cells
- c. Fusiform cells
- d. Horizontal cells of Cajal

69. The most likely neurotransmitter for cerebellar climbing fibers is

- a. Acetylcholine
- b. Glutamate
- c. Aspartate
- d. Dopamine

70. The only efferent fibers from the cerebellar cortex come from the

- a. Axons of Purkinje cells
- b. Mossy fiber projections
- c. Parallel fibers
- d. Climbing fibers

71. Which of the following cranial nerves is responsible for eye closure ?

- a. The oculomotor nerve
- b. The trochlear nerve
- c. The abducens nerve
- d. The facial nerve

72. The glossopharyngeal nerve crosses the jugular foramen with the
- a. Facial and vestibulocochlear nerves
 - b. Vestibulocochlear and vagus nerves
 - c. Vagus and spinal accessory nerves
 - d. Vestibulocochlear and spinal accessory nerves
73. The diencephalon develops into the
- a. cerebral cortex
 - b. Fourth ventricle
 - c. Cerebral aqueduct of Sylvius
 - d. Thalamic nuclei
74. Defects in the closure of the posterior neuropore cause
- a. Spina bifida
 - b. Anencephaly
 - c. Tethered cord syndrome
 - d. Holoprosencephaly
75. The medial geniculate body sends efferents to the
- a. Calcarine cortex
 - b. Temporal gyrus of heschl
 - c. Cerebellum
 - d. Mammillary body
76. Anencephaly results from
- a. A defect of prosencephalization
 - b. Failure of the anterior neuropore to close
 - c. Failure of the posterior neuropore to close
 - d. Failure of secondary neurulation
77. Which of the following structures pass through the jugular foramina ?
- a. The facial nerve
 - b. The cochleovestibular nerve
 - c. The hypoglossal nerve
 - d. The vagus nerve

78. Which of the following arteries supply the thalamus ?
- a. The middle cerebral artery
 - b. The anterior choroidal arteries
 - c. The posterior choroidal artery
 - d. The superior cerebellar artery
79. Which of the following structures is a part of the Papez circuit ?
- a. The medial lemniscus
 - b. The nucleus ambiguus
 - c. The hypothalamus
 - d. The hippocampus
80. Bordman area 6 of the cerebral cortex corresponds to the
- a. Frontal eye field
 - b. Broca convolution
 - c. Premotor somatosensory cortex
 - d. Angular gyrus
81. The anterior groups of the thalamus has reciprocal connection with
- a. Mammillary bodies
 - b. Amygdaloid nucleus
 - c. Auditory cortex
 - d. Striatum
82. The medial geniculate nucleus
- a. Is a relay thalamic nucleus in the auditory system
 - b. Receives fibers from the optic tract
 - c. Recives input from the somatosensory cortex
 - d. Is involved in motor corrdination
83. The first intracranial branch of the internal carotid artery is the
- a. Anterior cerebral artery
 - b. Anterior choroidal artery
 - c. Recurent artery of Heubner
 - d. Ophthalmic artery

84. Although the cerebrospinal fluid is mainly secreted by the choroid plexus, it is also secreted by the

- a. Inferior sagittal sinus
- b. The capillary – astrocyte complex
- c. Dura mater
- d. Pia mater

85. The first central nervous system relay for taste is located in the

- a. Nucleus ambiguus
- b. Solitary nucleus
- c. Lateral geniculate nucleus
- d. Medial genicular nucleus

86. A 'WEB' device is used in

- a. Aneurysm obliteration
- b. PACS system
- c. Radiotherapy
- d. Chemotherapy

87. Idiopathic intracranial hypotension is characterized by

- a. Dural enhancement
- b. Venous sinus congestion
- c. Both a and b
- d. None of the above

88. LMN facial palsy can be associated with

- a. Sarcoidosis
- b. Meningitis
- c. Bell's palsy
- d. All of the above

89. Prognosis in 'moya moya' disease is indicated by

- a. Ivy sign
- b. Cerebrovascular reactivity study
- c. Diffusion weighted imaging
- d. All of the above

90. Hypothalamic hamartoma

- a. Can turn malignant
- b. Seen involving the infundibulum
- c. Always present with gelastic seizures
- d. None of the above

91. Which statement is not true about tissue plasminogen activator in stroke treatment

- a. GP IIb/IIIa receptor inhibitor
- b. Used for intra arterial thrombolysis
- c. Intravenously it can be given in the first 4.5hrs of acute stroke
- d. Intracranial bleeding is a complication

92. Which is not an endovascular mechanical thrombectomy device?

- a. Abciximab
- b. Solitaire
- c. Merci
- d. Trevo

93. Artery of Percheron commonly arises from

- a. P1 segment of posterior cerebral artery
- b. Basilar artery bifurcation
- c. P2 segment
- d. Posterior communicating artery

94. The pathognomonic sign of arterial dissection is

- a. String sign
- b. Tapering occlusion (flame shape)
- c. Smooth or scalloped narrowing with distal normalization
- d. Double lumen

95. Commonest location of intracranial capillary telangiectasias is

- a. Cerebellum
- b. Cervical spinal cord
- c. Pons
- d. Mid brain

96. False statement regarding retinoblastoma

- a. Most common tumor of the eyeball in children
- b. MRI is the preferred imaging method
- c. Show lymphatic spread
- d. Show peri neural spread

97. Which of the following is not a persistent carotico vertebral anastomoses

- a. Pro-atlantal
- b. Otic
- c. hypoglossal
- d. occipital

98. Spetzler-Martin scale is used for

- a. Dural AV fistula
- b. Spinal vascular malformations
- c. Brain arterio venous malformations
- d. Vein of Galen malformations

99. All statements are true regarding vein of Galen malformation except

- a. Involves the median prosencephalic vein
- b. Most common extracardiac cause of high-output CHF in newborn period
- c. 30% of all pediatric vascular malformations
- d. Commonest presentation is intracranial bleeding

100. Which of the following is false regarding Perimesencephalic nonaneurysmal SAH

- a. SAH confined to perimesencephalic, prepontine cistern
- b. Most likely cause is ruptured perimesencephalic vein
- c. Associated with high incidence of vasospasm.
- d. Angiography is negative in 95% of cases

KEY DM NEURO RADIOLOGY 2017

1	a	51	d
2	c	52	a
3	b	53	d
4	d	54	d
5	d	55	b
6	a	56	c
7	c	57	d
8	d	58	d
9	d	59	d
10	b	60	a
11	d	61	a
12	a	62	c
13	b	63	a
14	b	64	b
15	d	65	b
16	a	66	b
17	c	67	d
18	b	68	b
19	d	69	c
20	b	70	a
21	c	71	d
22	c	72	c
23	c	73	d
24	b	74	a
25	d	75	b
26	b	76	b
27	c	77	d
28	b	78	c
29	a	79	d
30	a	80	a
31	a	81	a
32	b	82	a
33	d	83	d
34	b	84	b
35	a	85	b
36	d	86	a
37	b	87	c
38	a	88	d
39	b	89	d
40	b	90	d
41	a	91	a
42	d	92	a
43	c	93	a
44	b	94	d
45	a	95	c
46	a	96	b
47	b	97	d
48	c	98	c
49	c	99	d
50	a	100	c