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SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
THIRUVANANTHAPURAM—695 011

ENTRANCE EXAMINATION - ACADEMIC SESSION JANUARY 2019

PROGRAM: DM NEUROIMAGING AND INTERVENTIONAL NEURORADIOLOGY

Time: 90 Minutes

Max. Marks: 100

(Select the most appropriate answer)
(There are no negative marks for wrong answers)

1. The ICRP recommended effective dose limits for occupational exposure (in m Sv/year)
 - a. 10
 - b. 15
 - c. 20
 - d. 500
2. Which of the following statement is untrue regarding the azygos lobe fissure?
 - a. Azygos vein is seen at its lower end
 - b. Azygos vein is seen at its upper end
 - c. It is the most common accessory fissure visualized in the lungs
 - d. It is seen in 1% of the population
3. Characteristic feature of Macleod's syndrome is:
 - a. Unilateral hypertransradiant small lung
 - b. Enlarged ipsilateral pulmonary artery
 - c. Paradoxical movements of the ipsilateral hemi-diaphragm
 - d. All of the above
4. Commonest primary malignant tumor of rib is:
 - a. Chondrosarcoma
 - b. Liposarcoma
 - c. Fibrosarcoma
 - d. Osteosarcoma
5. Which of the following is true about military tuberculosis?
 - a. Multiple 3-4 mm discrete nodules are seen in both lungs
 - b. More commonly seen as a post primary process
 - c. Calcification in nodules is common
 - d. Have no residual changes
6. 'Rising sun' sign is seen:
 - a. Sequestration cyst of lung
 - b. Bronchogenic cyst
 - c. Lung abscess
 - d. Hydatid disease
7. Cavitation is commonly associated with which of the following pulmonary neoplasm?
 - a. Adenocarcinoma
 - b. Squamous cell carcinoma
 - c. Large cell carcinoma
 - d. Bronchioloalveolar cell carcinoma

8. Subpulmonary effusion and raised hemidiaphragm can be differentiated by:
 - a. PA view of the chest
 - b. Oblique view of the chest
 - c. Lateral decubitus view of the affected side
 - d. Lordotic view of the chest
9. Displaced crus sign on CT helps in distinguishing between:
 - a. Pleural effusion and ascites
 - b. Exudative and transudative pleural effusion
 - c. Pleural and pulmonary neoplasm
 - d. Between two crura of diaphragm
10. An increase of greater than cm in the transverse cardiac diameter on comparable serial chest radiographs is considered significant.
 - a. 0.5
 - b. 0.75
 - c. 1.0
 - d. 1.5
11. Erosion of the outer ends of the clavicle is seen in which of the following connective tissue disorder?
 - a. SLE
 - b. Rheumatoid arthritis
 - c. Scleroderma
 - d. dermatomyositis
12. Which of the following statement is untrue regarding the thymus gland?
 - a. It is absent in DiGeorge's syndrome
 - b. It has triangular or bilobed appearance on CT in children
 - c. It increases in size during severe neonatal infection
 - d. It undergoes fatty involution with advancing age
13. Which of the following statements is true regarding the pleuropericardial cyst?
 - a. Majority are seen in the left cardiophoric angle
 - b. They may change shape on respiration
 - c. Bochdalek hernia is an important differential diagnosis
 - d. They usually have thick, enhancing walls
14. Which of the following is true regarding the hydatid cyst in the lung?
 - a. It is seen as a calcified mass
 - b. It usually presents as soft opacity with internal calcification
 - c. It usually presents as a soft opacity without internal calcification
 - d. All are correct
15. Which of the following cannot cause bilateral pulmonary calcification?
 - a. Tuberculosis
 - b. Coccidioidomycosis
 - c. Histoplasmosis
 - d. Friedlander's pneumonia

16. Which of the following is false regarding lymphangiomyomatosis?
- It is primarily seen in premenopausal females
 - HRCT chest shows multiple thick-walled cysts
 - Chylothorax is common
 - Pneumothorax and hemoptysis may be seen
17. Ground glass haziness is seen in all except:
- Pneumonia
 - Left to right shunt
 - Obstructed TAPVC
 - Hyaline membrane disease
18. Most radiosensitive lung cancer is-
- Adenocarcinoma
 - Squamous Cell Carcinoma
 - Small cell carcinoma
 - Giant cell Carcinoma
19. Angle of tracheal bifurcation is increased in enlargement of-
- Right ventricle
 - Left ventricle
 - Right Atrium
 - Left Atrium
20. The best chest radiograph(screen film) are performed at-
- 50-65Kvp
 - 90-120 Kvp
 - 120-150 Kvp
 - 150-200 Kvp
21. The most common cause of spontaneous pneumothorax-
- TB
 - Rupture of sub pleural blebs
 - Bronchogenic CA
 - Bronchial Adenoma
22. Hoffman –Rigler sign is used for assessment of:
- Left ventricular enlargement
 - Right ventricular enlargement
 - Right atrial enlargement
 - Left atrial enlargement
23. De Bakey type 1 aortic dissection involves:
- Ascending aorta only
 - Ascending aorta, arch and descending aorta
 - Only arch of aorta
 - Ascending aorta + arch of aorta

24. Radiological features of Ebstein's anomaly includes all except:
- Massive globular cardiomegaly
 - Pulmonary oligemia
 - Normal size heart
 - Tubular heart
25. Contrast echocardiography is most commonly utilized for evaluating which of the following?
- Right to left shunts
 - Left to right shunts
 - Myocardial infraction
 - Valvular disease
26. The standard endotracheal tube position is indicated by which of the following?
- Tube tip at carina
 - Tube tip between 5-7 cm above the carina
 - Tube tip at 2 cm above the carina
 - None of the above
27. The upper limit of thickness of pericardium on CT is--- mm.
- 2
 - 3
 - 4
 - 5
28. All of the following are complications of the coronary angiography except:
- Dissection of the aorta
 - Coronary embolus
 - Arrhythmia
 - hypertension
29. cervical aortic arch is due to persistence of
- 6th aortic arch
 - 3rd aortic arch
 - 4th aortic arch
 - 5th aortic arch
30. Which of the following gases is used as contrast agent in DSA?
- Oxygen
 - Carbon dioxide
 - Carbon monoxide
 - Nitrogen
31. Left cardiac border bulge on a PA radiograph of the chest is seen in all of the following except:
- Azygos vein enlargement
 - Left atrial appendage enlargement
 - Pulmonary artery enlargement
 - Left ventricular enlargement

32. Following conditions are associated with right sided aortic arch except:
- Ventricular septal defect
 - Tricuspid atresia
 - Total anomalous pulmonary venous drainage
 - Tetralogy of fallot
33. Straight line sign is characteristically seen in which of the following conditions?
- Hepatic adenoma
 - Hepatic segmental hypoperfusion
 - Hepatic hydatidosis
 - Hepatic tuberculosis
34. Which of the following is not true regarding hepatic hemangioma?
- Diagnosis on CT requires sequential postcontrast scanning
 - It shows peripheral nodular enhancement with gradual fill in
 - It shows central nodular enhancement with gradual centrifugal enhancement
 - It can be mimicked by angiosarcoma
35. Causes of Pneumatosis intestinalis in the neonate and other children include all except:
- Necrotizing enterocolitis
 - Bowel ischemia and inflammation
 - Hirschsprung disease
 - Anorectal atresia
36. Differential diagnosis for failure to pass meconium in a neonate are all except:
- Hirschsprung's disease
 - Colon atresia
 - Anorectal malformation
 - Intussusception
37. Which statement regarding Caroli's disease is not true?
- Caroli's disease is nonobstructive dilation of the intrahepatic biliary ducts
 - The extrahepatic ducts are also dilated
 - Complications include cholangitis, sepsis, etc.
 - It is associated with autosomal recessive fibro-polycystic disease of liver and kidney
38. Which of the following statements about pancreatic pseudocyst is false?
- These are round or oval fluid collection with a fibrous wall
 - Spontaneous regression is seen in half the cases
 - They arise immediately after acute pancreatitis
 - They may be associated with complications
39. All are true about gastrointestinal stromal tumors except:
- These benign and malignant counterparts are indistinguishable from each other in imaging
 - Size > 5cm favor malignant lesion
 - It is common in stomach
 - Ulceration is uncommonly seen

40. Anatomic landmarks is most important in diagnosis of left paraduodenal hernia with CT:
- Inferior mesenteric vein
 - Superior mesenteric vein
 - Right colic vein
 - Splenic vein
41. All of the following are points favoring small bowel obstruction on an abdominal radiography except:
- Presence of valvulae conniventes
 - Central distribution of the bowel loops
 - Diameter of $> 5\text{cm}$
 - Absence of haustra
42. Which of the following is not a CT sign of closed loop intestinal obstruction?
- Twisted mesentery
 - Tapering of the loop
 - Thickening of the mesenteric vessels
 - String sign of Kantor
43. Chain of lakes appearance on ERCP is seen in which of the following?
- Acute pancreatitis
 - Chronic pancreatitis
 - Periampullary carcinoma
 - Pancreatic carcinoma
44. Which of the following statement is true about Hemochromatosis of the liver?
- MR shows nonspecific changes
 - CT shows a diffuse hyperdensity on noncontrast images
 - US is very specific technique to detect it
 - CECT is very specific in diagnosis of the disease
45. Cluster sign on CT liver is characteristic of which of the following?
- Hydatid disease
 - Abscess
 - Adenoma
 - Hepatocellular carcinoma
46. Which of the following is false regarding colonic pseudo-obstruction?
- Due to unopposed sympathetic stimulation
 - Barium enema is indicated to rule out obstruction
 - Presence of intraluminal gas is a sign of perforation
 - Sigmoid colon is not commonly distended in pseudo-obstruction
47. Which of the following is true for air reduction of intussusception?
- Lesser intracolonic pressure than for barium
 - Slower than barium, due to low pressure
 - Perforation is sterile
 - Larger tears than in barium

48. Features of GIT scleroderma is:
- Pneumatosis cystoids intestinalis
 - Folds are wildly separated
 - Stricture of small bowel
 - Common involvement is colon
49. Which of the following is false regarding congenital hepatic fibrosis?
- Cystic dilatation of bile duct and renal collecting duct ectasia
 - Always present in AR-Polycystic Kidney disease
 - Not associated with AD-Polycystic Kidney disease
 - Best imaging tool is MR-cholangiography
50. Flip-flop pattern of enhancement is seen in?
- Hepatic cirrhosis
 - Primary sclerosing cholangitis
 - Acute phase of Budd-chiari syndrome
 - Chronic phase of Budd-chiari syndrome
51. Which of the following is not true regarding biliary hamartoma?
- They are multiple and <1.5 cm in size
 - Best imaging tool is HRCT
 - They show near water density
 - They communicate with biliary tree
52. Which of the following is false regarding primary sclerosing cholangitis?
- Shows beaded appearance of biliary tree normally
 - CBD is almost always involved
 - More common in females
 - Caudate lobe goes for hypertrophy
53. A 29 year old man presents with a 6 month history of dysphagia, associated with retrosternal pain. A barium swallow demonstrates a markedly dilated esophagus containing food debris. There is a smooth narrowing of the distal esophagus with barium intermittently spurting into the stomach. What is the most likely diagnosis?
- Oesophageal achalasia
 - Paraesophageal hiatus hernia
 - Peptic oesophageal stricture
 - Squamous cell carcinoma of the esophagus
54. A neonate presents at 24 hours old with vomiting, abdominal distension and failure to pass meconium. A series of investigations are performed. Which of the following would be in keeping with a diagnosis of meconium ileus?
- A contrast enema showing a dilated terminal ileum
 - A contrast enema showing pellets of meconium within the terminal ileum
 - A contrast study showing narrow loops of proximal ileum
 - A plain abdominal radiograph with a soap bubble appearance within the left iliac fossa

55. Aortic diameter less than — at the level of the renal arteries should raise the suspicion of hypovolemic shock
- 12mm
 - 15mm
 - 20mm
 - 25mm
56. Majority of the abdominal aortic aneurysm are – in location.
- Suprarenal
 - Infrarenal
 - Renal
 - All have equal frequency
57. Commonest cause of inflammation of psoas muscle is:
- Idiopathic
 - Extension of the process from adjacent structures
 - Trauma
 - Hematogenous
58. Commonest cause of retroperitoneal fibrosis is:
- Idiopathic
 - Primary tumor
 - Metastases
 - Aneurysm
59. Cystic metastasis suggest the primary site of tumor is more likely from :
- Ovary
 - Colon
 - Breast
 - Lung
60. True about cystic mesothelioma is:
- Malignant tumor
 - Common in males
 - Tendency for local recurrence
 - Spare the pelvis
61. Most common type of internal hernia:
- Transmesenteric
 - Transomental
 - Paraduodenal
 - Pericecal
62. Which of the following statements regarding mesenteric panniculitis is false?
- It has an association with acute pancreatitis
 - It may have soft tissue or fat attenuation
 - It can be easily differentiated from liposarcoma on CT
 - Segmental omental infarction may resemble it

63. Desmoplastic reaction in mesentery is a feature of?
- Melanoma metastasis
 - Lymphoma
 - Carcinoid
 - Desmoid
64. Which of the following is the most common finding in mesenteric trauma?
- Free peritoneal fluid
 - Mesenteric fat stranding
 - Focal bowel wall thickening.
 - Free retro peritoneal air.
65. Dependent viscera sign is a feature of?
- Diaphragmatic palsy
 - Eventration of diaphragm
 - Diaphragmatic rupture
 - Diaphragmatic hump
66. Which of the following is not a main indication of IVP in current practise?
- To better characterize congenital urogenital anomalies
 - Early detection of renal tuberculosis
 - Renal mass
 - In management of complex renal calculus
67. The following disease causes narrowing and stretching of calyces on IVU study is:
- Lipomatosis
 - Adenomas
 - Hydronephrosis
 - Amyloidosis
68. Which of the following stone is radiolucent?
- Urate
 - Cystine
 - Calcium oxalate
 - Struvite
69. A swimmer from tropics complains of fever malaise and dysuria. US reveal bladder wall thickness and polypoidal lesions protruding into ureter. CT scan shows linear calcification egg shell in submucosa of bladder. Bladder capacity and contractility are well preserved. Findings are suggestive of:
- Carcinoma bladder
 - Schistosomiasis
 - Tuberculosis
 - Dracunculosis
70. Following are true about the kidney except:
- An IVU, the renal size corresponds to the first 3 to 4 lumbar vertebrae including the intervertebral disc
 - On US, the lower limit of renal size is 9 cm
 - The size measured on IVU is less than that measured on US
 - The parenchymal thickness of less than 1.5 cm is abnormal

71. In retrograde pyelography, all are true except:
- High concentration contrast agent 370 mg/mL is used
 - Usually 10mL of contrast medium is injected retrogradely
 - Calices show blunting
 - Contrast reactions occur
72. The earliest sign of hydronephrosis on IVU is:
- Loss of caliceal cupping
 - Blunting of the forniceal angle
 - Ballooning of the pelvis
 - None of the above
73. All are true about the retrocaval ureter except:
- It is always seen on the right side
 - The ureter is seen to deviate medial to the pedicle of the vertebra
 - Fish hook appearance may be seen
 - It may involve any part of the ureter
74. An important sonographic landmark in the testis is:
- Tunica albuginea
 - Testicular lobules
 - Mediastinum testis
 - Testicular artery
75. In Amyotrophic lateral sclerosis, the corticospinal tract shows
- Increased FA
 - Reduced FA
 - Reduced Mean Diffusivity
 - Any of the above
76. Which of the following is located in the antero- superior compartment of the internal auditory canal?
- Cochlear nerve
 - Facial Nerve
 - Superior Vestibular nerve
 - None of the above
77. 'India Ink' preparation is used to diagnose
- Invasive Aspergillosis
 - Tuberculosis
 - Cryptococcomas
 - Tinea soleum infection
78. 'Lentiform Fork sign' is seen in
- Osmotic demyelination of Pons
 - PRESS
 - Uremia
 - Zellweger syndrome

79. Which is TRUE in Japanese Encephalitis
- It is an entero viral encephalitis
 - Body of the hippocampus can be involved
 - Head of the hippocampus is more commonly involved
 - None of the above
80. Which of the following terminology is/ are omitted in 2016 CNS WHO?
- Diffuse fibrillary astocytoma
 - Gliomatosis Cerebri
 - Glioblastoma Multiformae
 - All of the above
81. Which is TRUE about Dysplastic Cerebellar Gangliocytoma
- rCBV is high
 - Choline is elevated
 - Shows diffusion Restriction
 - All of the above
82. Which cranial nerve exits through the Pre- Olivary sulcus
- IX
 - X
 - XI
 - XII
83. 'Dual rim' sign on SWI is described with
- Brain abscess
 - Cavernous angioma
 - GBM
 - All of the above
84. In Pituitary apoplexy which is NOT True
- Always hemorrhagic
 - Most common appearance is as intra sellar- suprasellar mass
 - Occurs in 1% of patients with pituitary macroadenoma
 - All of the above
85. High 'NAA' peak is seen in
- Sallas disease
 - Canavans disease
 - Neuroenteric cyst
 - All of the above
86. Which of the following statements is TRUE
- CT perfusion is quantitative
 - MR perfusion is more quantitative than CT perfusion
 - Diffusion restriction is not seen in hematomas
 - Granulomas always show Low perfusion

87. Which is TRUE about pericallosal lipoma
- Blooms on SWI
 - Shows T1 hyperintensity
 - Can be associated with callosal agenesis
 - All of the above
88. L1- L2 peak ratio on proton spectroscopy is used to differentiate
- GBM from Metastasis
 - Tuberculoma from Abscess
 - Tuberculoma from Cysticercosis
 - None of the above
89. Which of the following is NOT TRUE
- 8th nerve schwannomas usually arise from the vestibular nerve
 - Facial schwannomas can be seen involving the geniculate ganglion
 - Acoustic schwannomas can show GRE blooming
 - Normal facial nerve will not show contrast enhancement on MRI
90. Motor cortical mineralization can be detected in
- Motor Neuron Disease
 - Multiple Sclerosis
 - Cortico-basal Degeneration
 - All of the above
91. Independent Component Analysis is used in
- Resting state fMRI analysis
 - DTI analysis
 - VBM analysis
 - None of the above
92. Which cranial nerve is most commonly affected in Neurosarcoidosis
- 3rd
 - 4th
 - 5th
 - 7th
93. Tumefactive demyelination shows
- Open ring sign
 - Dual ring sign
 - Double ring sign
 - None of the above
94. Acute demyelinating polyneuropathy commonly shows
- Cord hyperintensity without enhancement
 - Ventral root enhancement
 - Dorsal root enhancement
 - Dorsal root ganglia enhancement

95. Diagnostic test of preference in CSF rhinorrhoea confirmation is
- CT cisternography
 - MR cisternography
 - Beta 2 Transferrin estimation
 - Radionuclide cisternography
96. Sessile hamartomas of the tuber cinerium usually produces
- Precautious puberty
 - Seizures
 - Diabetes insipidus
 - None of the above
97. Arterial Spin labeling of the brain can be used for
- Perfusion Measurement
 - Cerebro vascular reactivity measurement
 - Cerebral Angiography
 - All of the above
98. Focal Cortical Dysplasia Type IIIa denotes
- FCD with associated Gliosis
 - FCD with Balloon Cells
 - FCD associated with hippocampal atrophy
 - FCD with both dysplastic neurons and Balloon cells
99. Which standard developed is used for the transfer of textual data between different information systems in healthcare.
- DICOM
 - HL7
 - IHE
 - SNOMED
100. Artery of Bernasconi and Cassinari commonly arises from
- Middle cerebral artery
 - Basilar artery
 - Internal carotid artery
 - Anterior cerebral artery

