



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, तिरुवनंतपुरम् -

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

ENTRANCE EXAMINATION : ACADEMIC SESSION JANUARY 2019

M.ch Neurosurgery direct 5 year course (Post MBBS)

Time: 90 min

Max.Marks: 100

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

1. The following are the branches of Ophthalmic artery except,
 - a. Anterior ethmoidal artery
 - b. Posterior ethmoidal artery
 - c. Recurrent ophthalmic artery
 - d. Inferior hypophyseal artery
2. One of the following is not a glioneuronal tumor
 - a. Ganglioglioma
 - b. Gangliocytoma
 - c. Ependymoma
 - d. Central Neurocytoma
3. The first neurosurgery teaching department in India was established in
 - a. Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum.
 - b. All India Institute of Medical Sciences, New Delhi.
 - c. Madras Medical College, Madras.
 - d. Christian Medical College, Vellore.
4. The following tumors can present with intracerebral haemorrhage except,
 - a. Choriocarcinoma
 - b. Melanoma
 - c. Spinal Osteosarcoma
 - d. Renal Cell Carcinoma
5. In the epidemiology of Sub Arachnoid Haemorrhage (SAH) the following is true except,
 - a. Aneurysmal rupture is a cause of SAH
 - b. Trauma outscores all other causes of SAH

- c. Females are less affected by aneurysmal SAH as they smoke less than their male counterparts
- d. Up to 5% of the population may harbour aneurysms in their brain.
6. The following about fosphenytoin is false
- It has to be administered slowly as it can cause hypotension
 - Fosphenytoin is water soluble and hence can be administered IM or IV
 - It does not contain the preservative of Ethylene Glycol
 - It can be safely administered in status epilepticus.
7. What is the hourly rate of production of cerebrospinal fluid in the adult brain?
- 10 mL/h
 - 14 mL/h
 - 18 mL/h
 - 26 mL/h
8. The normal level of conus medullaris in infants and children is at the level of:
- L1-L2
 - L3-L4
 - L4-L5
 - T12-L1
9. Among dividing cells which are the stages when the cells are more sensitive to radiation?
- G1 phase and early S phase.
 - G2 phase and M phase.
 - Both A and B.
 - Late S phase and G1 phase.
10. Reason for hyper acute rejection of graft is:
- T cell mediated host versus graft reaction.
 - HLA mediated.
 - Diffuse intravascular preformed antibody mediated thrombotic changes.
 - Both B and C.
11. In breast malignancy during pregnancy which the following statements is least appropriate.
- 75% of patients already have lymph nodular metastasis at the time of diagnosis.
 - Chemotherapy is contraindicated in the 2nd and 3rd trimesters due to risk of teratogenicity.
 - Mammography is not very useful in the detection and work up of pregnant patients.
 - It has an incidence of 1 in 3000 pregnancies and is very aggressive in its natural history.
12. Which of the following statements about salivary gland neoplasms is not correct?
- 85% of all salivary neoplasms arise from the parotid gland.
 - 75% of all minor salivary gland tumours are malignant.

- c. Papillary cystadenoma lymphamatosum is a benign tumour most often seen in the parotid gland.
- d. 25% of all submandibular and sublingual salivary gland tumours are malignant.
13. Basal cell carcinoma or rodent ulcer is treated with;
- Wide excision and block dissection.
 - Dermatological lasers can be of great advantage.
 - Excision with 3-4 mm margin with reconstruction.
 - Excision followed by radiotherapy.
14. Which of the following statements is false regarding parasympathetic actions in the eye?
- The effectors are the pupillary constrictor smooth muscle and the ciliary smooth muscle.
 - The preganglionic fibres consisting of the visceral efferent pathway that runs in the oculomotor nerve.
 - The long ciliary nerves are the post ganglionic nerves.
 - The ganglion involved is the ciliary ganglion.
15. Which of the following statements regarding the development of the eye:
- The eye develops from optic vesicles which appear in the 6th week of embryonic development and is attached to the forebrain.
 - The posterior four fifth of the outer layer of the optic cup develops into the retina.
 - The ectoderm in contact with the optic vesicle forms the optic placode that invaginate into the vesicle to forms the lens vesicle.
 - The external ocular muscles are of mesodermal origin and arise from the occipital somites.
16. Extreme emaciation with loss of fat can cause nerve palsies as fat that support the nerves are important in cushioning the nerves and this is distributed in the -
- Endoneurium
 - Perineurium
 - Epineurium
 - Everywhere other than the nodes of Ranvier.
17. The conduction velocity of Type C fibres is
- 0.5 - 4 m/sec
 - 4- 30 m/sec
 - 30 -120 m/ sec
 - 6- 12 m/ sec
18. The following is not a component of Millard Gubler syndrome:
- Sixth nerve paresis
 - Ipsilateral 7th nerve paresis
 - Ipsilateral facial numbness.
 - Contralateral hemiparesis.

19. A nerve impulse or action potential starts at the:

- a. Axonal hillock.
- b. Initial segment.
- c. Dendrite.
- d. Cell body.

20. Which of the following statements about trihexyphenidyl is false?

- a. It is an anticholinergic drug with a higher central: peripheral action ratio than atropine.
- b. It is less effective than levodopa in drug induced Parkinsonism.
- c. Regarding its use in Parkinsonism, tremor is benefited more than rigidity and hypokinesia is affected the least.
- d. It can be used in conjunction with levodopa to reduce the dose of the latter.

21. The following statements about D dimer estimation in blood is correct except.

- a. The test has a high specificity but poor sensitivity.
- b. Pregnancy is associated with elevated D dimer levels.
- c. Trauma, myocardial infarction and some cancers can elevate the level of D dimer.
- d. D dimer is a degradation product of factor XIII fibrin.

22. Which of the following is not usually a sign of optic neuropathy?

- a. Junctional scotoma.
- b. Pain on movement of the eyes.
- c. Positive photopsias
- d. Decrease in colour vision.

23. Which of the following is not part of the auditory pathway?

- a. Spiral ganglion.
- b. Inferior colliculus.
- c. Superior olive.
- d. Medial lemniscus.

24. Ocular melanomas can have extensive systemic involvement and can spread to the:

- a. Optic chiasm and the brain parenchyma.
- b. Involve the deep cervical nodes.
- c. Metastases mainly to the lung.
- d. Metastases to the liver.

25. Causes of an increase in end tidal carbon dioxide include

- a. Air embolism.
- b. Massive pulmonary embolism.
- c. Reduced minute ventilation.
- d. Reduced cardiac output.

26. The lowest line of the Snellens chart when read at a distance of 6 meters indicates 6/6 vision. What is angle subtended by one letter in this line at the focal point of the eye?

- a. 1 Degree
- b. 5 degrees.
- c. One minute.
- d. 5 minutes.

27. The most common intracerebral vascular malformation is,

- a. Aneurysm
- b. Arteriovenous malformation
- c. Cavernoma
- d. Venous angioma

28. The resting potential of a neuron is approximately:

- a. -90 mV
- b. -65mV
- c. +50mV
- d. +65mV

29. Subacute combined degeneration of the spinal cord is caused by a deficiency of

- a. Cobalamin
- b. Folic acid
- c. Nicotinic acid
- d. Thiamine

30. The following are the current indications for using Gamma Knife Radiosurgery except,

- a. Vestibular Schwannoma
- b. Pituitary Adenoma
- c. Arterio Venous Malformations
- d. Glioblastoma

31. A positive Romberg sign indicates a disturbance of what structure(s)?

- a. Posterior columns
- b. Cerebellar vermis
- c. Cerebellar hemisphere
- d. Corticospinal tract

32. What involuntary movement disorder typically persists during sleep?

- a. Hemifacial spasm
- b. Blepharospasm
- c. Athetosis
- d. Facial myokymia

33. Which one of the following is the most appropriate marker for tumor proliferation?

- a. GFAP
- b. Ki-67
- c. LDH
- d. P53

34. Cerebral ischemia is usually seen when global cerebral blood flow is below:

- a. 60 ml per 100 g tissue per min
- b. 40 ml per 100 g tissue per min
- c. 30 ml per 100 g tissue per min
- d. 20 ml per 100 g tissue per min

35. Eosinophilic granuloma is associated with the following except.

- a. Osteolytic lesions.
- b. Langerhans Histiocytosis.
- c. Presents in the extremes of age.
- d. Letterer Siwe disease is a variant with poor prognosis.

36. The commonest location of coarctation of Aorta is at:

- a. Level of left renal artery.
- b. Distal to the left subclavian artery.
- c. Proximal to the innominate artery.
- d. Just above the diaphragm.

37. In a new born which of the following requires the earliest surgical intervention?

- a. Total anomalous pulmonary venous connection.
- b. Coarctation of aorta.
- c. Tetralogy of Fallot.
- d. Transposition of great vessels.

38. The commonest location of a cardiac myxoma is the:

- a. Right atrium
- b. Left atrium
- c. Valvular surface
- d. Right ventricle.

39. The treatment of choice for mesenteric artery occlusion of embolic origin is:

- a. Observation, bowel decompression and antibiotics.
- b. Anti coagulation and maintenance of blood pressure.
- c. Open embolectomy with second look laparotomy.
- d. Thrombolysis and follow-up angiograms.

40. Which of the following statements regarding carotid stenosis is not correct?
- Luminal stenosis of less than 30% is called mild stenosis.
 - More than 70% stenosis is considered severe.
 - Evidence favours carotid endarterectomy as the treatment of choice for symptomatic carotid stenosis of severe degree.
 - Carotid bruit is not a reliable sign in moderate and severe carotid stenosis.
41. Which vessel is commonly implicated in hemi facial spasm?
- Vertebral artery.
 - AICA.
 - PICA
 - Superior cerebellar artery.
42. Band of giacomini is located in the
- Occipital lobe.
 - Mesial temporal lobe.
 - Frontal lobe.
 - Thalamus.
43. Which of the following is not true regarding Esthesioneuroblastoma?
- It can have an intracranial and nasopharyngeal component.
 - It arises from the Nasal neuroepithelial cells and is otherwise called an olfactory neuroblastoma.
 - Kadish system of classification is used.
 - Gross total excision is curative.
44. Which of the following terms is a misnomer?
- Acoustic neurinoma.
 - Ependymoma.
 - Ganglioneuroma.
 - Ganglioglioma.
45. The dorellos canal is traversed by which of the following structures?
- Third Nerve.
 - The Mandibular division of the Vth nerve.
 - The 6th nerve.
 - The accessory nerve.
46. MALT is approached as a significant premalignant condition and the treatment of the same is.
- Total gastrectomy alone.
 - Total gastrectomy with chemotherapy.
 - Control H pylori and endoscopic followup.
 - Gastric antrectomy is sufficient treatment.

47. The technique of hernia repair with the least chance of recurrence is,

- a. Open tissue based repair.
- b. Lichenstein tension free repair.
- c. Bassini technique.
- d. Shouldice repair.

48. Which of the following is not a difference between omphalocele and gastroschisis ?

- a. In an omphalocele there is an overlying sac while in a case of gastroschisis there is no overlying sac.
- b. In omphalocele the umbilical cord attaches to the apex of the sac while a gastroschisis is almost always on the right side of the umbilicus..
- c. In gastroschisis the intestine is most often thick and oedematous with exudate seen on the surface while in an omphalocele the bowel surface is normal in appearance.
- d. Omphalocele is less likely to be associated congenital anomalies that influence prognosis of the infant than gastroschisis.

49. The commonest cause of renal artery stenosis is,

- a. Atherosclerosis.
- b. Fibromuscular dysplasia.
- c. Takayashu arteritis.
- d. Renal artery dissection.

50. Virchow's triad regarding contributing factors for venous thromboembolism is,

- a. Stasis, age, obesity.
- b. Endothelial damage, hypercoagulability, stasis.
- c. Endothelial damage, stasis and valvular incompetence.
- d. None of the above.

51. The American college of chest physicians recommended duration of anticoagulant treatment following provoked single episode of DVT is.

- a. 1 month.
- b. 6 months.
- c. 3 months.
- d. Lifelong.

52. The histological feature characteristic of Barrett's oesophagitis is,

- a. Columnar epithelium.
- b. Pseudostratified ciliated columnar epithelium.
- c. Parietal cells.
- d. Goblet cells.

53. The following statements are true with regards the left gastric artery except.
- It is usually the largest artery to the stomach.
 - Not infrequently it supplies left lobe of liver and inadvertent ligation can occasionally cause ischemia to the liver.
 - It is usually the larger of the divisions of the coeliac trunk and runs along the lesser curvature of the stomach.
 - It arises directly from the coeliac trunk.
54. Helicobacter pylori infection perpetuates duodenal ulcer through the following mechanism:
- Direct stimulation of gastrin release.
 - Inflammation and autoimmune reaction.
 - Urea splitting action that causes antral buffering with somatostatin mediated gastrin hypersecretion.
 - All of the above.
55. The current optimal initial management for a patient with bleeding duodenal ulcer is:
- Intravenous proton pump inhibitors.
 - Ice cold saline through ryles tube.
 - Distal gastrectomy.
 - Oversewing the ulcer to occlude the gastroduodenal artery.
56. Which of the following factors or findings give a predisposition for gastric malignancy?
- Pernicious anemia.
 - Blood group A.
 - Gastric adenomas.
 - All of the above.
57. When resecting a Crohn's diseases stricture the following principles may be adhered to:
- 2 cm margin may be given.
 - At least 12 cm margin is desirable.
 - A better approach is to obtain a frozen section to ensure a negative margin.
 - None of the above.
58. In short bowel syndrome the absorptive surface is insufficient to maintain nutrition and fluid and electrolyte balance. The typical length below which short bowel syndrome arises is.
- 3 meters.
 - 50 cm.
 - 100cm
 - 200 cm.

59. A 50 year old man presents with acute onset ascites. The ascitic fluid has a protein level 2.8 g/dL and an albumin level of 2.1 g/dL. A simultaneously obtained serum sample has an albumin level of 3.4g/ dl which of the following is the most likely cause ascites.
- Cirrhosis
 - Cardiac disease
 - Nephrotic syndrome
 - Pancreatic disease
60. Which of the following autoimmune diseases is associated with the presence of autoantibody to the thyroid-stimulating hormone receptor?
- Pernicious anemia
 - Congenital agammaglobulinemia
 - Wiskott-Aldrich syndrome
 - Graves' disease
61. Which of the following is not part of the internal capsule?
- Corticospinal fibres.
 - Thalamocortical fibres.
 - Rubrothalamic tract.
 - Optic radiation.
62. Which of the following is not characteristic of retrocochlear hearing loss:
- AC is better than BC.
 - Hearing loss is worse for higher frequencies.
 - Absence of tone decay.
 - A whisper may often be heard better than a loud conversation.
63. Which of the following features do not a feature of peripheral vertigo?
- Latency.
 - Severe with nausea and vomiting.
 - It is fatigable and adaptable.
 - Less consistent.
64. Which of the following statements about the hypoglossal nerve and innervation of the tongue is false?
- It is a pure motor nerve.
 - The hypoglossal nerve sends branches to the inferior vagal ganglion and the pharyngeal plexus.
 - The supra nuclear pathway of the hypoglossal nerve is predominantly uncrossed and bilateral and located in the depth of the sylvan fissure.
 - The hypoglossal nerve gathers into 2 bundles perforates the dura passes through the hypoglossal canal and unites into a single bundle.

65. Lesions in the midbrain dorsum results in all of the following except.

- a. Impaired up gaze.
- b. Dilated pupils with near light dissociation.
- c. Collier's sign.
- d. Loss of vestibuloocular reflex.

66. Double bubble sign in an infant is characteristic of:

- a. Duodenal atresia.
- b. Jejunal atresia.
- c. Meconium ileus.
- d. Pyloric stenosis.

67. Which of the following is not true with regarding a thyroglossal cyst?

- a. It is most often located below the cricoid cartilage along the track of the thyroglossal canal.
- b. They frequently get inflamed due to the presence of lymphoid tissue on the walls of the cyst.
- c. Excision classically requires division of the hyoid bone.
- d. They move with deglutition and with protrusion of the tongue.

68. Post-traumatic evaluation of a patient showed that he did not open his eyes to call, neither did he obey verbal commands and was mumbling incomprehensibly. On applying sternal pressure, the patient was noted to open his eyes and lifted his limbs to command and stated his name and address. The GCS recorded was

- a. E1 M1 V2
- b. E2 M6 V5
- c. E2 M1 V2
- d. E2 M1 V1

69. Not an example of intra-medullary spinal tumor ;

- a. Astrocytoma
- b. Malignant glioblastoma
- c. Lipoma
- d. Meningioma

70. In lumbar PIVD L4-5 level, false statement is,

- a. Root usually compressed L5.
- b. Motor weakness of EHL.
- c. Diminished knee jerk.
- d. Decreased sensation in the large toe web.

71. What nerve innervates the skin between the hallux and the second toe?

- a. Superficial peroneal nerve.
- b. Medial dorsal cutaneous nerve.

- c. Deep peroneal nerve.
- d. Tibial nerve.

72. What is the substrate for nitric oxide synthetase?

- a. Tyrosine
- b. Citrulline
- c. Arginine
- d. Asparagine

73. A 26 year old woman presented with increasingly severe headache and two generalised seizures 36 hours after the normal vaginal delivery of her first baby at 40 weeks' gestation. On examination, her temperature was 37.6°C, she was drowsy, there was a mild left hemiparesis and both plantar responses were extensor. What is the most likely diagnosis?

- a. Bacterial meningitis
- b. Pre-eclamptic toxemia
- c. Subarachnoid haemorrhage
- d. Venous sinus thrombosis.

74. The third ventricle is the cavity of the

- a. Metencephalon.
- b. Mesencephalon.
- c. Diencephalon.
- d. Telecephalon.

75. Von Hippel Lindau disease is associated with

- a. Haemangioblastoma.
- b. Vestibular schwannoma.
- c. Subependymal giant cell astrocytoma.
- d. None of the above.

76. First order neurons subserving vision is:

- a. Ganglion cells.
- b. Rods and cones.
- c. Bipolar cells.
- d. Cells of the geniculate body.

77. Rectus sheath hematoma usually presents as a:

- a. Mass visible outside.
- b. Sudden abdominal pain.
- c. Anaemia with tachycardia.
- d. Abnormal posture.

78. A 40 year old woman with a history of total colectomy for familial adenomatous polyposis developed a gradually enlarging mass in the anterior abdominal wall. The biopsy showed desmoid tumour with no evidence of malignant change. The treatment of choice in this patient is;
- Observation.
 - Wide excision.
 - Excision followed by doxorubicin and cisplatin.
 - Enucleation of lesion
79. Sliding hernia :
- Occurs exclusively in women.
 - It can involve the bladder.
 - It is more often seen on the right side.
 - It occurs more commonly in women.
80. The most common type of tracheoesophageal fistula encountered in pediatric practice includes;
- Esophageal atresia with distal TEF.
 - Esophageal atresia with proximal TEF
 - Isolated TEF
 - H type TEF.
81. Hodgkin's disease is a malignant lymphoma with four histological subtypes. Which of the following is not one of the subtypes?
- Mixed cellularity
 - Nodularsclerosis.
 - Lymphocyte depletion.
 - Leukocyte-lymphocyte dominance.
82. An ideal patient for trans-hiatal esophagectomy and gastric pull up would be:
- A 25 year old lady with upper third esophageal squamous cell carcinoma
 - A 40 year old man with lower third esophageal adenocarcinoma
 - A 30 year old man with a middle third esophageal perforation and mediastinitis
 - A 45 year old lady with gastroesophageal junction ulceroproliferative adenocarcinoma and ascites.
83. A 45 year old male presents with mild abdominal discomfort and he is apparently diagnosed with several gallstones. He is otherwise well. What is the most appropriate management?
- Consider elective cholecystectomy.
 - Investigate for impaired absorption of bile salts and bile pigments
 - Scan his liver for hepatic secondary tumor
 - Treat the gallstones medically with bile acid

84. A female neonate is born with severe respiratory distress as a result of a congenital diaphragmatic hernia. This was diagnosed antenatally. Through which one of the following foramina in the diaphragm has the hernia occurred?
- Aortic hiatus
 - Bochdalek's foramen
 - Inferior vena cava hiatus
 - Morgagni foramen.
85. A 50 year old man complains of symptoms of heartburn and acid reflux. He is due to have an oesophagogastroduodenoscopy (OGD). At what level will the normal gastro-oesophageal junction be found from the incisors?
- 36 cm
 - 38 cm
 - 40 cm
 - 42 cm
86. The commonest location of the artery of Adamkiewicz is :
- Left, D 6-8
 - Right, D9-11
 - Left, D9-11
 - Right, D6-8
87. A 35 year old man has been investigated for hypercalcaemia from primary hyperparathyroidism. A technetium-labelled sestamibi scan shows a parathyroid adenoma in the superior mediastinum. The adenoma has developed from which of the following sites of origin of the parathyroid?
- 1st pharyngeal pouch
 - 4th pharyngeal pouch
 - 2nd pharyngeal pouch
 - 3rd pharyngeal pouch
88. A 6 year old child has a focal cystic brainstem glioma and on neurological examination is noted to have a left "one-and-half syndrome". The lesion is presumed to have involved;
- Right medial longitudinal fasciculus and left parapontine reticular formation
 - Right medial longitudinal fasciculus and posterior commissure
 - Left medial longitudinal fasciculus and left parapontine reticular formation
 - Left medial longitudinal fasciculus and right parapontine reticular formation
89. Steroids impair wound healing by.
- Decreasing angiogenesis and macrophage migration.
 - Metabolic derangements.
 - Increased fibrinolysis.
 - Decreasing platelet plug integrity.

90. In patients with impaired wound healing with no micronutrient deficiency, supplementation of which of the following nutrients results in better wound healing.

- a. Vitamin C
- b. Vitamin A.
- c. Zinc
- d. Selenium.

91. Collagen is the factor which provides wound stability during healing and at least 18 types have been described. Which type of collagen is most important in wound healing?

- a. Type V
- b. Type III
- c. Type XI
- d. None of the above.

92. Which of the following statements regarding testicular torsion and its management is correct?

- a. Chance of testicular salvage is more than 80% if the surgery is performed within 24 hours.
- b. The procedure should include fixation of the opposite testis also as the structural defect, is bilateral
- c. Undescended testis is not a risk factor as testis has less freedom of torsion in the undescended state.
- d. Doppler ultra sound would show a reduction in blood flow to the testis and is necessary to make a diagnosis.

93. TURP syndrome, a complication of transurethral resection of prostate is usually associated with all except,

- a. Hyponatremia
- b. Hyperkalemia
- c. Cerebral edema
- d. Hypertension

94. Which of the the following mineralocorticoids does not have mineralocorticoid potency.

- a. Hydrocortisone.
- b. Prednisone.
- c. Dexamethsone.
- d. Cortosone acetate.

95. In a 54-year-old right-handed woman following the sudden onset of difficulty in reading. Investigation revealed a left parietal lobe infarct. What additional feature is most likely to be present?

- a. Acalculia
- b. confabulation
- c. cortical deafness
- d. expressive dysphasia

96. All of the following are true about Gradenigo's syndrome except
- It is due to cavernous sinus thrombosis
 - Associated with otitis media
 - 6th nerve palsy
 - Facial pain present.
97. Abulia is due to obstruction of
- M1 segment of MCA
 - M2 segment of MCA
 - A1 segment of ACA
 - A2 segment of ACA
98. An amenorrhea 35-year-old woman with galactorrhea is found to have a large prolactin-secreting pituitary tumor compressing her optic chiasm. Which visual disturbance does she have?
- Left central scotoma
 - Bitemporal hemianopia
 - Left nasal hemianopia
 - Left homonymous hemianopia
99. A 24-year-old man smells burnt rubber, then turns his head and upper body to the right, makes chewing movements, and fumbles with his clothes. During the episode, which lasts 1 minute, he appears dazed. Which of the following is the most likely diagnosis?
- Frontal lobe tumor
 - Conversion disorder
 - Partial complex seizure
 - Absence seizure
100. Subependymal giant cell Astrocytoma is associated with
- Tuberous sclerosis
 - Neurofibromatosis
 - Sturge Weber syndrome
 - Von Hippel Lindau syndrome