



ENTRANCE EXAMINATION : ACADEMIC SESSION JANUARY 2020

PROGRAM: DM Neurology (Paediatrics)

Time: 90 minutes

Max. Marks: 100

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

1. The following situations suggest paradoxical embolism as cause of stroke **except**
 - a) Patient who had a recent major surgery
 - b) Sudden onset of stroke during straining at stool.
 - c) Pulmonary embolization occurring before or after stroke
 - d) Patient is less than 65 years of age
2. CADASIL is caused by a mutation of the notch 3 gene on
 - a) Chromosome 19
 - b) Chromosome 17
 - c) Chromosome 6
 - d) Chromosome 20
3. The following are features of mycotic aneurysm **except**
 - a) Mycotic aneurysms are often multiple
 - b) They usually develop in the basal arteries of circle of Willis
 - c) These aneurysm resolve with effective antibiotic treatment
 - d) Accessible aneurysm may require surgical treatment
4. The first direct oral anticoagulant drug to be licensed for use is
 - a) Dabigatran
 - b) Apixiban
 - c) Rivaroxaban
 - d) Edoxaban
5. HAS-BLED score includes the following **except**
 - a) Hypertension
 - b) Labile INR
 - c) Diabetes Mellitus
 - d) Concomitant Aspirin or NSAID
6. The plasma half-life of alteplase is
 - a) 30 minutes
 - b) 5 minutes
 - c) 45minutes
 - d) 15 minutes

7. Which one of the following clinical signs in a young patient strongly suggests the diagnosis of multiple sclerosis?
- Acquired jerk nystagmus
 - Downgaze palsy
 - Rebound nystagmus
 - Bilateral internuclear ophthalmoplegia
8. A previously normal 3-year-old boy presents with language regression over the past 3 months. Video-EEG monitoring revealed left centrotemporal spikes, very frequent in sleep and rare in wakefulness, as well as focal slowing. Which of the following is the most likely diagnosis?
- Autistic regression
 - Landau-Kleffner syndrome
 - Continuous spikes and waves during slow wave sleep syndrome
 - Rett syndrome
9. A 7-month-old infant is brought to his pediatrician for evaluation of recurrent episodes of head drops with simultaneous arm extension, associated with postictal vomiting and crying. These always occur 30 to 45 minutes after feeding. He had two brief febrile seizures 1 month and 2 weeks prior to this admission, each of which lasted 2 minutes and was bilateral and symmetric. Neurologically this is a normal infant. Which is the most likely diagnosis?
- Severe myoclonic epilepsy of infancy
 - Complex febrile seizures
 - Myoclonic atstatic epilepsy
 - Sandifer syndrome
10. The presence of a focal structural lesion is least likely in an otherwise normal child with epilepsy who has:
- Brief losses of consciousness with EEG showing generalized 3-Hz spike-wave discharges
 - Frequent tonic-clonic convulsions
 - Recurrent focal paresthesias
 - Recurrent myoclonic and atonic seizures
11. A 4-month-old boy has exhibited generalized hypotonia and weakness since birth. He also has scoliosis and slow pupillary responses to light. Which of the following conditions is the most likely diagnosis?
- Neonatal myasthenia
 - congenital myasthenia syndrome
 - myasthenia gravis
 - drug induced myasthenia
12. Likelihood of a disease associated genotype to express a specific disease phenotype is called
- Expressivity
 - Penetrance
 - Anticipation
 - Relative risk

13. Which of the following disorder is inherited as Autosomal dominant disorder?
- Friedrich's ataxia
 - Phenylketonuria
 - Huntington's disease
 - Fabry's disease
14. Clinical exome sequencing is a genetic test used for identifying
- Point mutations
 - Non coding variants
 - Copy number variations
 - Repeat expansions
15. Interferon beta used in preventing relapses in Multiple Sclerosis acts by
- Decreasing production of IL-10, thereby up regulating TH1 cells.
 - Decreasing production of IL-12, thereby inhibiting TH1 production
 - Downregulated VCAM expression
 - Inhibits myelin basic protein
16. In HIV infection of brain,.....protein can bind directly to CXCR4 on neurons, resulting in neuronal signaling and apoptosis.
- HIV protein gp120
 - SDF-1
 - CCR5
 - MMP
17. Which of the following gastrointestinal peptide has an effect on feeding behavior and satiety thru its effect on nervous system?
- Vasoactive intestinal peptide
 - Somatostatin
 - Cholecystokinin
 - Secretin
18. REM behavioral disorder can be often been secondary to which among the following neurodegenerative disorder or may precede its onset by years?
- Alzheimer's disease
 - Frontotemporal dementia
 - Parkinson's disease
 - Huntington's disease
19. Which among the following medication is effective for both day time sleepiness and cataplexy in Narcolepsy?
- Methyl phenidate
 - Clomipramine
 - Modafinil
 - Sodium oxybate
20. The drug of choice for treatment of Paroxysmal Kinesigenic Dyskinesia is:
- Carbamazepine
 - Clonazepam
 - Acetazolamide
 - Levodopa

21. Mutations in the Epsilon Sarcoglycan gene result in which of the following conditions?
- Miyoshi Myopathy
 - Laing Distal Myopathy
 - Myoclonus Dystonia
 - Segawa Syndrome
22. Aceruloplasminemia is associated with accumulation of which of the following elements in the brain?
- Manganese
 - Iron
 - Zinc
 - Copper
23. Presence of which among the following clinical features would help to differentiate Serotonin Syndrome from Neuroleptic Malignant Syndrome?
- Altered mental state
 - Myoclonus
 - Tachycardia
 - Rigidity
24. Hyponatremia and "facio-brachial dystonic seizures" are characteristic of which of the following conditions?
- Anti NMDA receptor autoimmune encephalitis
 - LGI1 antibody associated limbic encephalitis
 - Anti-amphiphysin antibody associated encephalomyelitis
 - Anti-Ri associated paraneoplastic encephalitis
25. Safinamide used in the treatment of Parkinson's disease is a
- Catechol-O-Methyl Transferase Inhibitor
 - Dopamine agonist
 - Monoamine Oxidase-B Inhibitor
 - Anti-apoptotic agent
26. Development of which among the following symptoms post-operatively, attributable to the procedure, was a setback noted in fetal nigral cell transplantation studies in Parkinson's disease?
- Depression and suicide
 - Impulse control disorders
 - Dyskinesia
 - Freezing of gait
27. What is the typical tremor frequency in Orthostatic Tremor?
- 2-4 Hz
 - 5-8 Hz
 - 10- 14 Hz
 - 14-18 Hz
28. Hoehn and Yahr staging is used to assess the severity of which of the following diseases?
- Parkinson's disease
 - Alzheimer's disease
 - Huntington's disease
 - Amyotrophic Lateral sclerosis

29. Monocular temporal crescent results from
- Ipsilateral Chiasmatic lesions
 - Ipsilateral Optic nerve lesions
 - Contralateral calcarine lesions
 - Contralateral temporal lobe lesions
30. Lesions in which of the following areas is likely to lead to a pseudo thalamic sensory syndrome:
- Medial lemniscal lesions
 - Posterior-superior parietal lesions
 - Parietal opercular lesions
 - Midbrain tegmental lesions
31. Mutations of the microtubule-associated protein tau gene causes a phenotype resembling which of the following neuro-degenerative diseases?
- CJD
 - Fatal familial insomnia
 - Huntington disease
 - Progressive supranuclear palsy
32. All of the following symptoms are associated with dysfunction in the anterior cingulate circuit **except**
- Obsessive-compulsive disorder
 - Apathy
 - Akinetic mutism
 - Poor response inhibition
33. All of the following statements are true with regard to memory consolidation **except**:
- Frontal lobe is the 'filing clerk' of the memory system
 - Medial temporal lobe is the 'recent memory filing cabinet' for consolidation
 - Injection of protein synthesis inhibitors into the hippocampus can enhance memory consolidation
 - Activation of the CREB gene in the Aplysia model is necessary for long-term facilitation
34. Which of the following sign is noted with infarcts of thalamic paramedian or deep interpeduncular profundus artery?
- Hemi neglect
 - Hemiataxia
 - Loss of convergence & pupillary reflexes
 - Loss of pain, temperature and vibration sense
35. Which of the following statements is true with regard to neurocysticercosis (NCC):
- Spinal cord cysticercosis is the most prevalent form
 - Extra parenchymal disease occurs in one-third of patients with NCC
 - Increase intracranial pressure does not occur with the racemose form of NCC
 - Most pediatric patients have a single transitional cyst that does not resolve spontaneously
36. The primary, secondary and tertiary action of the inferior rectus muscle is
- Intorsion, depression and adduction respectively
 - Depression, intorsion and abduction respectively
 - Depression, extorsion and abduction respectively

- d) Depression, extorsion and adduction respectively
37. Which of the following is NOT an eye sign in myasthenia gravis?
- Cogan's lid twitch
 - Peek sign
 - Enhanced ptosis
 - Unilateral ptosis with contralateral eye lid retraction
38. All of the following cause primarily a sensory neuropathy **except**
- acromegaly
 - critical illness
 - HIV infection
 - hypothyroidism
39. True about Fingolimod is
- monoclonal antibody
 - dose is 50-100mg daily
 - given subcutaneously
 - inhibits lymphocyte trafficking to CNS
40. Memantine acts by
- acetyl cholinesterase inhibition
 - blocking overexcited NMDA receptors
 - GABA_B receptor agonistic action
 - all of the above
41. Excess of which product is the key initiator of cellular damage in Alzheimer's disease
- A β 40
 - P3
 - A β 42
 - α secretase product
42. Parkinson's disease –Dementia is characterized by primary involvement of
- executive function and attention
 - episodic memory and language
 - calculations and visuo- spatial construction
 - semantics
43. Endoscopic trans axillary T2 sympathectomy is done for
- excess palpitation
 - primary hyperhidrosis
 - excess lacrimation
 - sialorrhoea
44. The type of dementia commonly associated with amyotrophic lateral sclerosis is
- Diffuse Lewy Body dementia
 - Frontotemporal dementia
 - Alzheimer's disease
 - Cerebral amyloid angiopathy
45. In Charcot-Marie –Tooth disease type1 (CMT 1) the motor conduction velocities are
- < 38 meter / second in upper limbs
 - >38 meter / second in upper limbs

- c) < 38 meter / second in lower limbs
d) >38 meter / second in lower limbs
46. The Dix- Hallpike test is used for the diagnosis of which of the following conditions
- Posterior semicircular canal BPPV
 - Horizontal semicircular canal BPPV
 - Vestibular neuronitis
 - Arnold Chiari malformation
47. Which of the following medicine is available as a nasal formulation for acute attack of migraine?
- Rizatriptan
 - Zolmitriptan
 - Eletriptan
 - Almotriptan
48. Which among the following mitochondrial diseases is **NOT** commonly associated with ragged red fibers in muscle biopsy?
- Mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episodes (MELAS)
 - Kearns-Sayre syndrome (KSS)
 - Mitochondrial neurogastrointestinal encephalomyopathy (MNGIE)
 - Neuropathy, ataxia, retinitis pigmentosa syndrome (NARP)
49. Which of the following infections is noted to have a strong association with incidence of multiple sclerosis?
- Human herpes virus 7
 - Varicella zoster
 - Epstein Barr virus
 - Coxsackie B virus
50. The eye movement abnormality seen in Parinaud syndrome
- Ocular bobbing
 - Convergent retraction nystagmus
 - Opsoclonus
 - Reverse bobbing
51. Which of the following statements about sickle cell anemia in pediatric population is TRUE?
- Commonest neurological presentation is Posterior reversible encephalopathy syndrome
 - Salmonella septicemia is the most common infectious complication seen in this condition
 - Most common reason for hospitalization in sickle cell anemia is due to pulmonary complications
 - Transcranial Doppler is a useful tool for predicting risk of ischemic stroke in patients with sickle cell anemia.

52. Which chemotherapeutic agent can produce sensory neural hearing loss as a side effect?
- Busulfan
 - Vincristine
 - Cisplatin
 - Cyclophosphamide
53. What is the approximate FiO₂ (Fraction of Inspired Oxygen in percentage) during use of a nasal cannula in an older child when the nasal cannula flow rate is kept at 3 Liters / minute?
- 21%
 - 30%
 - 40%
 - 50%
54. Which of the following may be a direct consequence of severe magnesium deficiency?
- Hypophosphatemia
 - Hypercalcemia
 - Hypokalemia
 - Shortening of the QT/QT interval
55. Neurofibromatosis type I is associated with which mutation?
- 9q34
 - 3p25-25
 - 17q11.2
 - 22q12.2
56. Select the most appropriate statement regarding distinguishing Cardiogenic from Non-Cardiogenic Pulmonary edema?
- Prominent rales and wheezes on chest auscultation right from early stages suggest non-cardiogenic pulmonary edema.
 - Interstitial thickening and predominant perihilar distribution of alveolar infiltrates suggests non-cardiogenic rather than cardiogenic pulmonary edema
 - Pleural effusions are more common in non-cardiogenic pulmonary edema when compared to cardiogenic pulmonary edema
 - Ventilation – perfusion mismatch is largely responsible for hypoxemia in Cardiogenic pulmonary edema, unlike non-cardiogenic pulmonary edema where other factors operate
57. Which of the following is indicative of central diabetes insipidus
- Plasma osmolality <290 mosmol/kg
 - High urine osmolality
 - Reduction in body weight by of child by >5% from starting weight
 - Absence of rise in urine specific gravity following DDAVP
58. A 7-year-old boy is referred because of digestive problems. He often experiences severe abdominal cramps after eating a high fat meal. He is worked up and diagnosed with a genetic defect resulting in a deficiency of lipoprotein lipase. Which of the following substances would most likely be elevated in this patient's plasma following fatty meal?
- Albumin-bound free fatty acids
 - Chylomicrons
 - LDL
 - Unesterified fatty acids

59. Antibiotics used in MDR-TB which can cause optic neuritis
- Linezolid
 - Isoniazid
 - Pyrazinamide
 - Ofloxacin
60. Which bacterial meningitis can be contracted by ingestion of contaminated food products ?
- Haemophilus influenza
 - Listeria monocytogenes
 - Neisseria meningitidis
 - Staphylococcus aureus
61. An 8 year old girl presented with a diffuse erythematous rash, fever, severe headache and is found to have meningitis due to a particular organism. She and her siblings had never received any childhood vaccines because their parents were concerned about reports linking vaccination to autism. Which of the following treatments should be administered to the patient's asymptomatic siblings?
- Ampicillin
 - Dexamethasone
 - rifampicin
 - vaccine to the detected organism
62. Which of the following is the most common neurologic manifestation of Zika virus in adults?
- encephalitis
 - Guillain Barre syndrome
 - meningitis
 - transverse myelitis
63. Which of the following is recommended as the primary test for rapid diagnosis of cryptococcal meningitis
- cryptococcal antigen in CSF
 - cryptococcal antigen in serum
 - fungal culture in CSF
 - india ink microscopy in CSF
64. In a patient with chronic meningitis, the presence of (1, 2) beta-Dglucan in the CSF implies that the underlying infectious agent is which of the following?
- bacterial
 - carcinomatous
 - fungal
 - protozoal
65. A 33 year old woman with acquired immunodeficiency syndrome presents with a 3 weeks course of progressive weakness, numbness and pain in both lower limbs. Examination is consistent with a lumbo sacral polyradiculopathy. Which of the following viral infections is most likely responsible for this presentation?
- cytomegalovirus
 - Epstein Barr virus
 - Human herpes virus 6
 - human immunodeficiency virus

66. HHV 6 most often causes which of the following clinical syndromes?
- acute inflammatory demyelinating polyradiculoneuropathy (AIDP)
 - chronic lymphocytic inflammation with pontine perivascular enhancement responsive to steroids
 - Dural venous sinus thrombosis
 - post transplantation acute limbic encephalitis
67. Which of the following disease process is the most common cause of bilateral facial nerve palsy in children?
- herpes simplex virus infection
 - neuroborreliosis
 - neurosarcoidosis
 - varicella zoster virus infection
68. An enzyme linked immunoelectrotransfer blot of a sample from which of the following sources is the most sensitive and specific test for past or present neurocysticercosis?
- CSF
 - saliva
 - serum
 - stool
69. A 72 year old man is seen in the emergency, 1 day after the onset of progressive left arm and leg weakness. 3 days earlier he had a febrile illness with headache, nausea and myalgia. Examination shows flaccid weakness of the proximal muscles on the left with absent deep tendon reflexes. Brain MRI is normal and spinal cord MRI shows T2 hyper intensity in the grey matter of the anterior spinal cord. Infection with which of the following arboviruses is most likely?
- dengue virus
 - West Nile virus
 - St Louis encephalitis
 - Zika virus
70. Which of the following medicines has been most commonly implicated in the development of non-infectious chronic meningitis?
- acetaminophen
 - acyclovir
 - ibuprofen
 - beta lactam antibiotics
71. Abductor pollicis brevis is a thenar muscle
- Innervated by recurrent branch of median nerve with root value of C8 & T1
 - Innervated by deep branch of ulnar nerve with root value of C8 & T1
 - Innervated by recurrent branch of median nerve with root value of C4 & C5
 - Is always spared in carpal tunnel syndrome as the nerve exits the median nerve before it enters the carpal tunnel
72. Medial Winging of scapula is due to
- weakness of serratus anterior which is innervated by long thoracic nerve
 - weakness of serratus anterior which is innervated by thoracodorsal nerve
 - weakness of latissimus dorsi which is innervated by long thoracic nerve
 - weakness of latissimus dorsi which is innervated by thoracodorsal nerve

73. Quadriceps femoris muscle
- is innervated by L2, L3 and L4 roots through the femoral nerve
 - is innervated by L1 and L2 roots through femoral nerve
 - is innervated by L2, L3 and L4 roots through Obturator nerve
 - is innervated by L5 and S1 roots through the femoral nerve
74. Extensor digitorum brevis
- is innervated by L4, L5 and S1 roots through the deep peroneal nerve
 - is innervated by L4, L5 and S1 roots through the superficial peroneal nerve
 - is innervated by L4, L5 and S1 roots through the tibial nerve
 - is innervated by L4, L5 and S1 roots through the safenous nerve
75. Klinefelter's syndrome is a chromosomal abnormality associated with increased predisposition to develop which malignancy?
- Lymphoproliferative disorders
 - Breast cancer
 - Wilm's tumor
 - Soft tissue sarcoma
76. Which of the following statements regarding congenital adrenal hyperplasia is true?
- Hypertension is not seen in 11 beta hydroxylase deficiency
 - Buildup of 17-hydroxyprogesterone noted in 21-hydroxylase deficiency
 - Ambiguous genitalia are noted in girls with 3beta-hydroxysteroid dehydrogenase deficiency
 - During treatment additional sodium chloride replacement is required after the second year of life
77. What is the order of puberty in girls?
- Thelarche, menarche and pubarche
 - Pubarche, thelarche and menarche
 - Thelarche, pubarche and menarche
 - Menarche, pubarche and thelarche
78. Which of the following obesity syndrome is characterized by retinitis pigmentosa, polydactyly and hypogonadism?
- Alstrom syndrome
 - Carpenter syndrome
 - Cohen syndrome
 - Bardet-Biedl syndrome
79. Which among the following transplacental infections is not associated with retinitis?
- Cytomegalovirus
 - Rubella
 - Enterovirus
 - Toxoplasma
80. Which of the following statements is TRUE regarding neonatal sepsis following maternal chorioamnionitis?
- The probability of neonatal infection doesn't correlate with the degree of prematurity and bacterial contamination of the amniotic fluid.
 - If a pathogen is isolated from blood culture or if an infant develops signs and symptoms consistent with sepsis, a Lumbar Puncture is indicated.

- c) Lumbar puncture is recommended only if there is clinical evidence for bacterial meningitis such as stiff neck, bulging fontanel and convulsions
- d) If the mother has been treated with antibiotics for chorioamnionitis, then presumptive treatment of the neonate with antibiotics is not indicated

81. What is the most common cause of abdominal mass in neonates?
- a) Neuroblastoma
 - b) Wilm's tumour
 - c) Multicystic dysplastic kidneys
 - d) Distended bladder
82. Which of the following is the commonest cause for persistent proteinuria in children and adolescents?
- a) Orthostatic proteinuria
 - b) Exercise
 - c) Dehydration
 - d) Idiopathic nephrotic syndrome
83. Which among the following tubular transport disorders is related to voltage gated potassium channel mutation?
- a) Type I Bartter syndrome
 - b) Type II Bartter syndrome
 - c) Type III Bartter syndrome
 - d) Gitelman syndrome
84. Bilateral nephrectomy is indicated in Denys-Drash syndrome due to
- a) High risk of Wilm's tumor
 - b) Co-existent polycystic kidney disease to create space for transplant kidney
 - c) Hyposthenuria with polyuria
 - d) Resistant severe hypertension
85. What causes hyper acute renal transplant rejection?
- a) Acute non-immune injury
 - b) Preformed antibodies to donor HLA antigens
 - c) Resistance to immunosuppressive therapy
 - d) B cell and complement mediated cytotoxicity induced by tubular antigens
86. A 4-month old girl was treated for a first episode of urinary tract infection and responded well within 48 hours. The further recommended testing is/are
- a) No further tests are necessary
 - b) Ultrasound scan during first 6 weeks of infection
 - c) Ultrasound scan in the acute stage of infection and DMSA scan in 3 months
 - d) Micturating cystourethrogram within 2 weeks followed by ultrasound abdomen
87. In physiological anemia of infancy, Hemoglobin reaches the nadir at what week of life?
- a) 4-8 weeks of life
 - b) 8-12 weeks of life
 - c) 12-16 weeks of life
 - d) 16-20 weeks of life

88. Which among the following investigations is most useful in diagnosis of Iron deficiency anemia in pediatric age group.
- Peripheral smear
 - Mean corpuscular volume
 - Serum ferritin+c-reactive protein
 - Serum transferrin saturation
89. Earliest joint to be affected by hemarthrosis in infants with Hemophilia A is
- Knee joint
 - Elbow joint
 - Hip joint
 - Ankle joint
90. Which among the following conditions is known to cause respiratory alkalosis by stimulating the respiratory centers?
- Hyperammonemia
 - Organic acidemia
 - Methanol poisoning
 - Ethylene glycol poisoning
91. To define acute lung injury, the pulmonary artery wedge pressure should be:
- >12 mm of Hg
 - <12 mm of Hg
 - 18 mm of Hg
 - <18 mm of Hg
92. "Sandstorm" appearance in chest X Ray with greater density in lower and middle lung fields is characteristic of which among the following conditions?
- Pulmonary alveolar proteinosis
 - Follicular bronchiolitis
 - Cryptogenic organizing pneumonia
 - Pulmonary alveolar microlithiasis
93. The earliest pathological change in the lung in Cystic Fibrosis is:
- Bronchitis
 - Bronchiolar obliteration
 - Alveolitis
 - Bronchiolitis
94. What is not a feature of Carnitine Palmitoyl Transferase 2 deficiency in children?
- At risk for malignant hyperthermia
 - Fatal non-ketotic hypoglycemic encephalopathy
 - Associated with severe muscle cramps
 - Muscle injury may happen on low-carbohydrate, high-fat diets
95. A 10 year old obese boy has central fat distribution, arrested growth, hypertension, plethora, purple stria, and osteoporosis. Which of the following disorders is most likely to be responsible for the clinical picture that this boy presents?
- Bilateral adrenal hyperplasia
 - Adrenal adenoma
 - Adrenal carcinoma
 - Ectopic ACTH producing tumor

96. Which of the following is **not** a phenotypic association of Laurence-Moon-Biedl Syndrome
- a) Renal abnormalities
 - b) Linear fissures on ear lobes
 - c) Diabetes insipidus
 - d) Polydactyly/clinodactyly
97. Simian facies is seen in
- a) Marasmus
 - b) Kwashiorkor
 - c) Rickets
 - d) Down syndrome
98. Scaly periorificial dermatitis, conjunctivitis and alopecia is classically seen in deficiency of
- a) Vitamin A
 - b) Niacin
 - c) Biotin
 - d) Riboflavin
99. The classical MRI finding in dystonic cerebral palsy due to bilirubin encephalopathy involves
- a) Thalamus
 - b) Putamen
 - c) Caudate
 - d) Globus pallidus
100. The currently recommended range of oxygen saturation targets for neonates with hyaline membrane disease is
- a) 91-95%
 - b) 95-99%
 - c) 100%
 - d) 85-89%