MIZORAM PUBLIC SERVICE COMMISSION

TECHNICAL COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF GRADE-II OF MIZORAM HEALTH SERVICE (SPECIALIST SUB-CADRE) UNDER HEALTH & FAMILY WELFARE DEPARTMENT, GOVERNMENT OF MIZORAM. OCTOBER, 2022

PAPER - II (TECHNICAL)
PAEDIATRICS DEPARTMENT

Time Allowed : 3 hours | Full Marks : 200

All questions carry equal marks of 2 each.
Attempt all questions.

1. A 30-day-old girl presented with lethargy, poor feeding, and repeated vomiting for last 5 days; IV fluid and empirical antibiotics were started; later she develops repeated seizures not responding to IV calcium, glucose, B6, and anticonvulsant drugs. Septic screen is negative; serum ammonia is elevated with normal anion gap and normal pH. Family history reveals 2 siblings died with same scenario. The MOST likely diagnosis is

(a) hyperglycinemia
(b) organic acidemias
(c) phenylketonuria
(d) urea cycle defects

2. A 3-year-old boy presented with history of hyperactivity and mild mental retardation. Past history revealed repeated projectile vomiting with normal abdominal sonography. On examination, there are eczematoid rash with lighter skin, microcephaly, and mild spasticity with exaggerated tendon reflexes. The MOST likely urine odour of this baby is

(a) musty
(b) rotting fish
(c) sweaty feet
(d) boiled cabbage

3. Xanthomas are a feature of all the following EXCEPT

(a) familial hypercholesterolemia
(b) familial dysbetalipoproteinemia
(c) familial combined hyperlipidemia
(d) hypothyroidism

4. In embryonic period, all the following are true EXCEPT

(a) Formation of blastocyst by 8 days
(b) Formation of endoderm and ectoderm by 2 weeks
(c) Formation of mesoderm by 6 weeks
(d) Formation of human like embryo by 8 weeks

5. In foetal period, all the following are true EXCEPT

(a) By 10 weeks the midgut returns to abdomen
(b) By 24 weeks surfactant production begun
(c) By 26 weeks recognizable human face formed
(d) during third trimester the weight triples

6. Evaluation for pubertal delay in female should be done if she lacks any pubertal signs by the age of

(a) 12 yr
(b) 13 yr
(c) 14 yr
(d) 15 yr

7. The MOST common presentation of mitochondrial â-oxidation of fatty acids disorders is

(a) cardiomyopathy
(b) muscle weakness
(c) renal tubulopathy
(d) hypoglycemic coma

8. The MOST common manifestation of cerebral oedema from an overly rapid decrease of serum sodium concentration during correction of hypernatremic dehydration is

(a) irritability
(b) hyperreflexia
(c) spasticity
(d) seizure

9. The ratio of the intracellular fluid volume to the extracellular fluid volume approaches adult levels at the age of

(a) 1 yr
(b) 2 yr
(c) 3 yr
(d) 4 yr

10. Expansion of the intravascular volume and increased intravascular pressure are the main causes of edema in

(a) Lymphatic obstruction
(b) Heart failure
(c) Protein-losing enteropathy
(d) Nephrotic syndrome

11. Major cause of neonatal mortality in full-term newborn is

(a) respiratory distress syndrome
(b) necrotizing enterocolitis
(c) bronchopulmonary dysplasia (BPD)
(d) congenital anomalies

12. When screening for intraventricular haemorrhage , the best time to perform an ultrasound is

(a) first day of life
(b) second day of life
(c) third day of life
(d) fourth day of life

13. The MOST important risk factor for necrotizing enterocolitis (NEC) in preterm infants is

(a) breast feeding
(b) Apgar score
(c) exposure to glucocorticoids during the first week of life
(d) gestational age and birth weight

14. Pneumatosis intestinalis is pathognomonic for

(a) Hirschsprung's disease
(b) pseudomembranous enterocolitis
(c) neonatal ulcerative colitis
(d) meconium ileus

15. The following factors suggest haemolytic disease as a cause of jaundice in the new-born EXCEPT

(a) bilirubin rise of >0.5 mg/dL/h
(b) reticulocytosis >5% at birth
(c) onset of jaundice before 24 hours of age
(d) significant decrease in haemoglobin

16. Administration of antenatal corticosteroids to women between 24 and 34 wk of gestation significantly reduces the following EXCEPT

(a) incidence and mortality of RDS
(b) postnatal growth
(c) the overall neonatal mortality
(d) need for and duration of ventilatory support

17. The following are true regarding meconium aspiration syndrome (MAS) EXCEPT

(a) (MAS) develops in 5% of meconium-stained infants
(b) 30% require mechanical ventilation
(c) overdistention of the chest may be prominent
(d) usually occurs in preterm or near-term infants

18. Regarding breast milk jaundice, the following are true EXCEPT
(a) it develops in an estimated 2% of breast-fed term infants
(b) maximal unconjugated bilirubin concentrations as high as 10-30 mg/dL reached during the 2nd-3rd week
(c) jaundice may persist for 3-10 wk.
(d) kernicterus never occurs

19. Absolute indication for surgery in neonatal necrotizing enterocolitis (NEC) include
(a) positive result of abdominal paracentesis
(b) failure of medical management
(c) a single fixed bowel loop on radiographs
(d) abdominal wall erythema

20. A poor prognostic sign of congenital diaphragmatic hernia (CDH) is
(a) grunting
(b) use of accessory muscles
(c) early respiratory distress, within 6 hr of life
(d) cyanosis

21. Common respiratory tract manifestations of neonatal bacterial infections is
(a) ethmoiditis
(b) otitis media
(c) mastoiditis
(d) retropharyngeal cellulitis

22. Intracranial calcification may be a feature of one of the following transplacental infections
(a) cytomegalovirus
(b) herpes simplex virus
(c) varicella-zoster virus
(d) syphilis

23. One of the following is FALSE regarding intrapartum antibiotics
(a) reduce vertical transmission of GBS
(b) lessen neonatal morbidity after preterm rupture of membranes
(c) prevent perinatal transmission of GBS
(d) reduce the rates of late-onset GBS disease

24. All the following amino acids are indispensable in human diet EXCEPT
(a) methionine
(b) threonine
(c) valine
(d) alanine

25. The MOST commonly used index for nutritional status is
(a) height-for-age
(b) weight-for-height
(c) body mass index
(d) weight-for-age

26. The MOST profound consequence of undernutrition is
(a) premature death
(b) repeated infections
(c) stunting
(d) cell damage

27. The following vitamins and trace elements are recommended to be given during the stabilization phase of malnutrition EXCEPT
(a) iron
(b) vitamin A
(c) folic acid
(d) zinc

28. The MOST characteristic lesion of vitamin A deficiency is
(a) xerophthalmia
(b) corneal ulcers
(c) Bitot spots
(d) keratomalacia

29. 25-hydroxy vitamin D level is reduced in
(a) vitamin D deficiency
(b) autosomal recessive hypophosphatemic rickets
(c) autosomal dominant hypophosphatemic rickets
(d) Fanconi syndrome

30. The following hereditary forms of rickets may help to diagnose an apparently healthy mother with the same disease
(a) X- linked hypophosphatemic rickets
(b) autosomal dominant hypophosphatemic rickets
(c) autosomal recessive hypophosphatemic rickets
(d) Fanconi syndrome

31. The first factor to be affected by deficiency of vitamin K is
(a) Factor I
(b) Factor II
(c) Factor VII
(d) Factor IX

32. MOST specific but late radiographic feature of scurvy is
(a) pencil outlining of the epiphysis and diaphysis
(b) the white line of fränkelat the metaphysis
(c) Trümmerfeld zone at the metaphysis
(d) Pelkan spur at cortical ends

33. The following are recognized causes of craniotabes EXCEPT
(a) osteogenesis imperfect
(b) rickets
(c) syphilis
(d) Sotos syndrome

34. Parathyroid hormone level is reduced in
(a) vitamin D dependent rickets
(b) X- linked hypophosphatemic rickets
(c) hypophosphatasia
(d) dietary calcium deficiency

35. Thiamine-responsive megaloblastic anemia syndrome is a rare disorder, it is characterized by the following EXCEPT
(a) diabetes mellitus
(b) peripheral neuritis
(c) megaloblastic anemia
(d) sensorineural hearing loss

36. Brown-Vialetto-Van Laere syndrome (BVVLS), a neurologic disorder characterized by progressive neurologic deterioration, sensorineural hearing loss, and pontobulbar palsy usually responds to treatment with high doses of
(a) niacin
(b) biotin
(c) riboflavin
(d) pyridoxine

37. The MOST convenient way to confirm a diagnosis of pellagra in children is
(a) skin biopsy
(b) urinary 2-pyridone
(c) response to niacin treatment
(d) urinary n1-methyl-nicotinamide

38. In a child less than 3 years, the diagnosis of failure to thrive (FTT) is considered if
(a) Weight is below the 3rd percentile
(b) Weight drops down more than 2 major percentile lines
(c) Weight for height is less than the 1st percentile
(d) BMI less than the 25th percentile

39. Regarding the physical growth of preschool children (3-5 yr); all the following are true EXCEPT
(a) 4-5 kg weight increment/yr
(b) 7-8 cm height increment/yr
(c) head will grow only an additional 5-6 cm up to18 yr
(d) all 20 primary teeth have erupted by 3 yr

40. The first permanent tooth to erupt is
(a) central incisor at 6 yr
(b) molar at 6 yr
(c) premolar at 6-7 yr
(d) lower canine at 6-7 yr

41. The child who is able to imitates construction of "gate" of 5 cubes; draws a man with 2-4 parts besides head and identifies longer of 2 lines, his/her MOST appropriate developmental age is around
(a) 24 mo
(b) 30 mo
(c) 48 mo
(d) 54 mo

42. Between 2-6 months of life, the infant start to achieve a regular sleep–wake cycles. All the following are true about infant sleep during this period EXCEPT
(a) total sleep hours are about 14-16 hr/24 hr
(b) sleeps about 9-10 hr concentrated at night
(c) sleeps 2 naps/day
(d) the sleep cycle time is similar to that of adults

43. Of those babies who have prolonged crying episodes in the first 2 mo of life, the percentage that will remain having similar episodes is about
(a) 1%
(b) 5%
(c) 10%
(d) 30%

44. The MOST common cause of sleeping difficulty in the first 2 months of life is
(a) gastro-esophageal reflux
(b) formula intolerance
(c) colic
(d) developmentally sleeping behavior

45. These facts are true regarding the developmental stage of preschool children EXCEPT
(a) handedness is achieved by 3 years of age
(b) boys are usually later than girls in achieving bladder control
(c) knowing gender by 4 years
(d) egocentric thinking

46. The following statements about sleep are true EXCEPT
(a) melatonin which is secreted in dark-light cycles is secreted from hypothalamus
(b) slow-wave sleep is the first cycle of sleep
(c) rapid eye movement (REM) sleep is responsible for dreams
(d) both cycles are needed for sufficient sleep

47. As a result of effective and safe vaccines, which of the following diseases has been eradicated?
(a) smallpox
(b) polio
(c) measles
(d) rubella

48. Preterm infant, weight 1600 gm, should not receive the following vaccine at birth
(a) BCG
(b) hepatitis B, if born to a HBs Ag negative mother
(c) polio
(d) DPT

49. Which of the following vaccines is contraindicated for a patient with X-linked agammaglobulinemia?

(a) BCG
(b) hepatitis B
(c) DPT
(d) MMR

50. Which of the following vaccines is contraindicated for a patient with chronic renal disease?

(a) pneumococcal
(b) hepatitis B
(c) live attenuated influenza
(d) varicella

51. Administration of the following vaccine is contraindicated in children with egg allergy

(a) MMR
(b) Influenza
(c) DPT
(d) yellow fever

52. The side effect of MMR vaccine are all except

(a) Sore arm from the shot
(b) Fever
(c) Mild rash
(d) paralysis

53. Anemia and reticulocytopenia that occur in the 2nd half of infancy period is LEAST likely due to

(a) congenital hypoplastic anemia (Diamond-Blackfan anemia)
(b) transient erythroblastopenia of childhood
(c) a protracted, prolonged course of the anemia of hemolytic disease of the newborn
(d) aplastic crises complicating various types of chronic hemolytic anemias

54. The main stay of treatment for congenital hypoplastic anemia is

(a) corticosteroids
(b) androgen
(c) antithymocyte globulin (ATG)
(d) fully matched-related stem cell transplantation

55. A 1-year-old child has folic acid deficiency since the age of 4 months, the best indicator of this deficiency is

(a) significant fall of reticulocytes count
(b) high level of lactate dehydrogenase LDH
(c) decrease level of RBC folate
(d) increase number of hypersegmented neutrophils

56. The first laboratory marker in progressive iron deficiency anemia is

(a) depletion of bone marrow hemosiderin
(b) falling of serum ferritin
(c) decrease of serum iron and increase of the iron-binding capacity
(d) decrease hemoglobin synthesis

57. Splenectomy is recommended in all the following conditions EXCEPT

(a) a 6-year-old child with hereditary spherocytosis and significant hemolysis
(b) a 7-year-old child with hereditary elliptocytosis and a hemoglobin level of 7 g/dL and corrected reticulocytes count of more than 15%
(c) an 8-year-old child with hereditary stomatocytosis with hemolysis
(d) a 6-year-old child with thalassemia major with splenomegaly and frequent blood transfusion requirement

58. The best diagnostic test for paroxysmal nocturnal hemoglobinuria (PNH) is

(a) acidified serum hemolysis (HAM) test
(b) sucrose lysis test
(c) complement assay
(d) flow cytometry

59. The best assessment of iron overload for patients with thalassemia major is achieved by

(a) liver MRI
(b) bone marrow biopsy
(c) serum iron
(d) serum ferritin

60. Increased incubated osmotic fragility test that is not corrected by the addition of glucose is MOST likely suggestive of

(a) hereditary spherocytosis
(b) hereditary stomatocytosis
(c) glucose-6-phosphate dehydrogenase deficiency
(d) pyruvate kinase deficiency

61. All the following may cause autoimmune haemolytic anaemia EXCEPT

(a) systemic lupus erythematosus (SLE)
(b) mycoplasma pneumoniae infection
(c) lymphoproliferative disorder
(d) penicillin drug administration

62. Fragmentation hemolysis by mechanical injury may be seen in all the following EXCEPT

(a) extensive burns
(b) Kasabach-Merritt syndrome
(c) after cardiac surgery for prosthetic heart valve replacement
(d) thrombotic thrombocytopenic purpura (TTP)

63. All the following conditions may be associated with iron deficiency EXCEPT

(a) prolonged intravascular hemolysis
(b) celiac disease
(c) congenital heart disease with right to left shunt
(d) prolonged use of isoniazid (INH)

64. Which of the following viruses is more likely to be associated with chronic immune thrombocytopenia?

(a) parvovirus
(b) influenza virus
(c) parainfluenza virus
(d) human immune deficiency virus

65. A 5-year-old child, with hemophilia A of severe type, presents to the emergency unit with a groin pain after a minor trauma to his back; his blood pressure is 60/30 mm Hg; his pulse rate is 180/min; he holds his right hip in a flexion position with internal rotation. The NEXT step in the management of this child is

(a) factor VIII replacement therapy
(b) intravenous 1-deamino-8-d-arginine vasopressin (DDAVP)
(c) factor VIII assay
(d) abdominal ultrasonography

66. Which of the following is not a feature of Wiskott–Aldrich Syndrome (WAS)

(a) eczema
(b) recurrent otitis media and pneumonia
(c) propensity to develop autoimmune disorders
(d) giant platelets by blood smear

67. Of the following, the genetic syndrome MOST likely associated with increased risk of optic glioma is

(a) Down syndrome
(b) neurofibromatosis 1
(c) monosomy 7
(d) Bloom's syndrome

68. Constellation of aniridia and hemihypertrophy is strongly associated with increased risk of which of the following tumors?

(a) rhabdomyosarcoma
(b) hepatoblastoma
(c) Wilms' tumor
(d) neuroblastoma

69. Undescended testis is a risk factor for the development of which of the following tumors?

(a) rhabdomyosarcoma
(b) leukemia
(c) yolk sac tumor
(d) lymphoma

70. Epstein-Barr virus (EBV) infection is more likely to be associated with all the following malignancies EXCEPT

(a) nasopharyngeal carcinoma
(b) T-cell lymphoma
(c) Hodgkin lymphoma
(d) hepatocellular carcinoma

71. Which of the following malignancies is least likely to occur in a 10-month-old infant?

(a) nephroblastoma
(b) retinoblastoma
(c) hepatoblastoma
(d) Ewing sarcoma

72. Which of the following types of translocation of childhood AML that typically associated with granulocytic sarcoma mass?

(a) t(15:17)
(b) t(8:21)
(c) inv(16)
(d) t(6:9)

73. Which of the following types of leukaemia is MOST likely to develop in a 2-year-old child with Down syndrome who has been developed transient myeloproliferative disorder in the neonatal period?

(a) CML
(b) AML M1
(c) AML M6
(d) AML M7

74. Chemotherapy has a major role in many childhood CNS tumors. In which of the following tumors chemotherapy is not effective?

(a) medulloblastoma
(b) pilocytic astrocytoma
(c) craniopharyngioma
(d) pineoblastoma

75. Childhood primary brain tumors are less likely to metastasize extraneurally. Which of the following is MOST likely considered a risk factor for extraneural metastasis?

(a) supratentorial tumor
(b) age of the patient of less than 10 year
(c) female gender
(d) ventriculoperitoneal (VP) shunt insertion

76. Renal cell carcinoma (RCC) is rare in children, accounting for <5% of all renal tumors of childhood. All the following are true regarding RCC in children EXCEPT

(a) patients may present with frank hematuria, flank pain, and/or a palpable mass
(b) it has a propensity to metastasize to the lungs, bone, liver, and brain
(c) it can be associated with von hippel–lindau disease
(d) local lymph node involvement has an adverse outcome

77. During a routine examination of a 10-mo-old male infant, you find a white pupillary reflex of right eye; the eye movements are normal. The BEST confirmatory diagnostic evaluation of this infant is

(a) indirect ophthalmoscopy with slit-lamp examination
(b) examination under general anesthesia by an experienced ophthalmologist
(c) retinal biopsy
(d) orbital ultrasonography

78. Hepatoblastoma occurs predominantly in children younger than 3 yr. of age. The following are associated risk factors for development of hepatoblastoma EXCEPT

(a) familial adenomatous polyposis
(b) prematurity
(c) low birth weight
(d) hepatitis C infection

79. You are evaluating a 5-year-old male child with Langerhans cell histiocytosis (LCH); you states to the parents that skeletal survey and bone scan are important investigations as bones are the most common sites of involvement. The MOST common site of bone involvement by LCH is

(a) skull
(b) mandible
(c) vertebra
(d) pelvis

80. Syndrome of inappropriate antidiuretic hormone secretion (SIADH) is characterized by

(a) Extravascular volume expansion
(b) High serum uric acid
(c) High blood urea nitrogen
(d) Euvolemic hyponatremia

81. Normal anion gap metabolic acidosis can occur in

(a) Renal failure
(b) Liver failure
(c) Severe anaemia
(d) Malignancy

82. The critical site for the renal regulation of sodium balance is the

(a) Proximal tubule
(b) Loop of Henle
(c) Distal tubule
(d) Collecting duct

83. Hematuria is defined as the presence of at least 5 red blood cells per microliter of urine, false-positive results may be seen in urinary dipstick reading in all the following EXCEPT

(a) contamination with hydrogen peroxide
(b) presence of formalin
(c) hemoglobinuria
(d) myoglobinuria

84. The primary treatment of IgA nephropathy is appropriate blood pressure control and management of significant proteinuria. Regarding the treatment, which of the following is TRUE?

(a) corticosteroids not improve renal function
(b) tonsillectomy is currently recommended
(c) successful kidney transplantation
(d) cyclophosphamide is effective in improving renal function

85. Renal biopsy in acute post streptococcal glomerulonephritis should be considered in all the following EXCEPT

(a) acute renal failure
(b) nephrotic syndrome
(c) absence of evidence of streptococcal infection
(d) low C3 level in the first 2 months

86. WHO classification of lupus nephritis is based on a combination of features including light microscopy, immunofluorescence, and electron microscopy. The WORST outcome is associated with

(a) class I nephritis
(b) class II nephritis
(c) class III nephritis
(d) class IV nephritis

87. In hemolytic-uremic syndrome, thrombotic microangiopathies are associated with aII the following EXCEPT

(a) genetically determined factor H deficiency
(b) neuraminidase-producing Streptococcus pneumonia infection
(c) systemic lupus erythematosis
(d) hypotension

88. Corticosteroids remain an integral part of many immunosuppressive protocols despite their multifaceted toxicities. The MOST noteworthy side effect in children is

(a) obesity
(b) hypertension
(c) aseptic necrosis of bone
(d) retarded skeletal growth

89. Hemorrhagic cystitis can occur in response to all the following EXCEPT

(a) cyclophosphamide
(b) adenovirus infection
(c) cyclosporine
(d) polyoma BK virus infection

90. All the following are secondary causes of nephrotic syndrome EXCEPT

(a) measles
(b) malaria
(c) syphilis
(d) toxoplasmosis

91. Indications for dialysis in acute kidney injury include all the following EXCEPT

(a) anuria/oliguria
(b) persistent hypercalcemia
(c) severe metabolic acidosis
(d) volume overload

92. An elevated polymorphonuclear (PMN) cells count in cerebrospinal fluid (CSF) suggests

(a) tuberculous meningitis
(b) early phase of aseptic meningitis
(c) fungal meningitis
(d) demyelinating diseases

93. Electroencephalogram (EEG) in febrile seizure is characterized by the following EXCEPT

(a) an EEG need not normally be performed in first simple febrile seizure
(b) an abnormal EEG could predict the future recurrence of febrile seizures or epilepsy
(c) spikes during drowsiness are often seen in children with febrile seizures
(d) an EEG performed within 2 wks. of a febrile seizure often have nonspecific slowing

94. Absence seizures are MOST often initially treated with

(a) ethosuximide
(b) valproate
(c) lamotrigine
(d) acetazolamide

95. Benign myoclonic epilepsies are often best treated with

(a) lamotrigine
(b) topiramate
(c) valproate
(d) benzodiazepines

96. Neuro-imaging is warranted in a child with headache in the following conditions EXCEPT

(a) abnormal neurologic examination
(b) afternoon headache
(c) headache in children <6 yr old
(d) brief cough headache

97. All the following are features of Von Hippel–Lindau (VHL) disease EXCEPT

(a) its incidence is around 1: 36,000
(b) fifty percent have a de novo gene mutation
(c) hemangioblastoma of the spinal cord may be found
(d) renal carcinoma is the most common cause of death

98. Characteristic features of pseudotumor cerebri include the following EXCEPT

(a) headache
(b) stiff neck
(c) papilledema
(d) abnormal CSF profile

99. The MOST common precipitant of status epilepticus in children is

(a) CNS infection
(b) fever
(c) medication change
(d) trauma

100. The ketogenic diet is absolutely contraindicated in

(a) primary carnitine deficiency
(b) myoclonic– astatic epilepsy
(c) tuberous sclerosis complex
(d) Rett syndrome

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