



NNF Doctor's Fellowship August 2020 Exit Examination

Theory Paper 2

Multiple Choice Questions

Roll No _____

Duration 2 hours**Maximum Marks: 100**

General Instructions:

Each question carries 1 mark

0.25 marks per wrong answer shall be subtracted

Write the most appropriate answer in the box provided in front of each question

BOOKLET IS TO BE RETURNED BACK FOR EVALUATION

All Questions are Single response type

1. At birth, a baby has unilateral affected Moro's reflex in upper limbs with positive palmar grasp reflex on affected side. The fracture has been ruled out. The most likely root value of lesion is :

- a. C3- C4
- b. C5 – C6
- c. C7– C8
- d. C5,6,7,8 – T1

2. How much is the normal breast milk sodium content (mEq/L):

- a. 7 ± 2
- b. 12 ± 2
- c. 17 ± 2

d. 22 ± 2

3. In a given hospital, there were 2900 live births and 100 still births in the year 2019. In the same year 60 newborn babies died among which 50 died in the 1st week of life.

Calculate the perinatal mortality rate.

a. 40

b. 50

c. 60

d. 70

4. In BERA, wave 5 corresponds to the activity of:

a. Medial lemniscus

b. Superior colliculus

c. Inferior colliculus

d. Superior olivary nucleus

5. As per NFHS -4 data, the breastfeeding rate(%) within 1 hr of birth in India is approximately

a. 40

b. 50

c. 60

d. 70

6. In New Ballard scoring system, out of the neuromuscular maturity which one parameter has a maximum score of 5?

a. Posture

b. Arm recoil

c. Square window

d. Popliteal angle

7. All are intrauterine growth charts, **except:**

a. Lubchenco

b. Fenton

c. Usher

d. Brenner

8. All are ECG changes in hypokalemia, **except:**

a. Prolonged PR interval

b. Flattened T waves and ST depression

c. Prolongation of QT interval

d. Appearance of U waves

9. Zero order kinetics is followed by which of following:

A. Phenytoin

B. Phenobarbitone

C. Ampicillin

D. Gentamicin

10. Which of the following is suggested best method for disinfection of spoon and paladai:

a. Cleaning with alcohol

b. Boiling for 20min

c. Cleaning with soap and water

d. Cleaning with soap and water followed by boiling for 20 min

11. A neonate is born with erythroderma, elevated IgE levels and hair shaft abnormalities.

The most probable syndrome is:

a. Netherton

b. Wiscott Aldrich

c. OMENN

d. None of the above

12. A 3.5 kg neonate is ventilated with MAP of 10 cm H₂O, FiO₂ 70% in view of MAS.

ABG showed pH 7.26, PCO₂ – 50, PaO₂- 70 and BE = -7. Calculate the Oxygenation Index and which one of the following is correct value:

a. 10

b. 7.8

c. 24

d. 12

13. All are true about lung development, **except**:

a. lamellar bodies are present at 24 weeks gestation

b. large airways are formed at 16 weeks gestation

c. there is virtually no smooth muscle in the terminal and respiratory bronchioles at birth

d. cuboidal cells are capable of gas transfer in utero

14. All of the following features are seen in necrotising enterocolitis in neonates, **except** :

a. Hyponatremia

b. Metabolic acidosis

c. Thrombocytopenia

d. Hyponatremia

15. At what gestation in weeks the fetus begins to swallow amniotic fluid in

a 11- 14

b 15-18

c 19-22

d 23-26

16- The most common type of trachea-esophageal anomaly is:

a Esophageal atresia without tracheoesophageal fistula (TEF)

b Esophageal atresia with a TEF to the proximal esophageal segment.

c Esophageal atresia with a TEF to the distal esophageal segment

d Esophageal atresia with TEF to both the proximal and distal esophageal segments.

17- Which of the following option correctly denotes antenatal USG findings of fetal bowel obstruction :

- a Dilated bowel loops (>15 mm in length and 7 mm in diameter)
- b Mural thickness greater than 3 mm
- c Polyhydramnios
- d All of the above

18- Most common trisomy associated with **double bubble sign** on antenatal USG is:

- a 21
- b 18
- c 16
- d 13

19- In Hirschsprung disease , the predominant gene affected is:

- a *RET* proto-oncogene
- b Endothelin receptor *B (EDNRB)* gene
- c Down syndrome cell adhesion model (*DSCAM*) gene
- d Endothelin-converting enzyme (*ECE1*) gene

20. Water content (%) of meconium is approximately :

- a- 50-60
- b- 60-70
- c 70-80
- d- 80-90

21- Which component of meconium causes direct lung injury?

- a- Angiotensin 2
- b- Thromboxane A2
- c-Alpha1 antitrypsin
- d-Phospholipase A2

22. Amount of bilirubin(%) removed by double volume exchange transfusion is:

- a. >80
- b. 70-80
- c. 60-70
- d. <60%

23. ELA 2 gene is associated with :

- a. Diamond blackfan anemia
- b. Fanconi anemia
- c. Congenital neutropenia

d. Hereditary Elliptocytosis

24. Composition of Hb F is:

- a. $\alpha_2\beta_2$
- b. $\alpha_2\gamma_2$
- c. $\alpha_2\delta_2$
- d. $\alpha_2\varepsilon_2$

25. Which of the following is **NOT** a component of Renal vein thrombosis triad :

- a. Hematuria
- b. Fever
- c. Flank mass
- d. Thrombocytopenia

26. Birbeck granules are seen in :

- a. Leucocyte adhesion defect
- b. Langerhan cell histiocytosis
- c. Wiskott Aldrich syndrome
- d. Chediak Higashi syndrome

27. Which Clotting factor is in higher concentration in neonate compared to adult reference range.

- a. Von Willebrand factor
- b. Fibrinogen
- c. Protein C
- d. Protein S

28. Non Stress Test is based on the principle :

- a. Uterine activity augments heart rate
- b. Foetal activity results in reflex acceleration in heart rate
- c. Foetal breathing movements result in reflex acceleration in heart rate
- d. Amniotic fluid index affects the heart rate

29. Target preductal saturation at 3 minutes of birth is :

- a. 75%-80%
- b. 65%-70%
- c. 70%-75%
- d. 80%-85%

30. Potential complication of SGA/ IUGR include all the following, EXCEPT:

- a. Perinatal depression
- b. Hypothermia
- c. Birth Trauma
- d. Persistence pulmonary hypertension

31. What is non-maleficence:

- a. Welfare of the patient
- b. Justice to parents
- c. Do not harm
- d. Freedom to decide

32. Which of the following is true regarding newborn assessment:

- a. Hyperpigmentation of the scrotum should raise suspicion of adrenogenital syndrome
- b. Mongolian patches usually get resolved in first two years of life or so
- c. Cephalohematoma may appear on day 2 to 3 of life
- d. All of the above

33. Which of these is FALSE regarding medical transport:

- a. In preterm infant with RDS, wait at least 30 minutes after surfactant administration before transport.
- b. Endotracheal intubation is usually warranted for transport of an infant requiring PGE1 infusion
- c. Maternal transport prior to birth is preferable in high risk cases
- d. Fio₂ delivered to the infant should be decreased while travelling to high altitude

34. Closure of the ductus arteriosus results from:

- a. Activation of an oxygen sensitive sodium channel
- b. Fall in circulating level of PGE₂
- c. Deficiency of EP₄ receptor
- d. Failure of local growth factors

35. Which of the following statements about BIND score is FALSE:

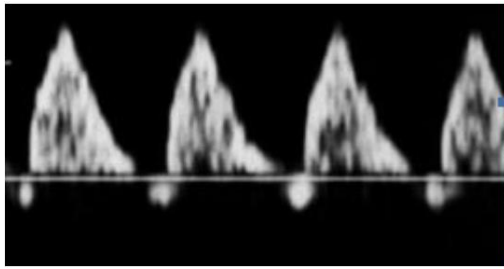
- a. It is dependant on the level of serum bilirubin
- b. The cry is an important component
- c. A neonate with opisthotonus will have a high score
- d. Sun set sign is of great significance

36. With reference to neonatal resuscitation, the following statements are false, **except**:

- a. All term infants born through meconium-stained amniotic fluid must have a laryngoscopy for visualization and aspiration of the trachea
- b. It is possible to initiate administration of positive pressure ventilation without supplemental oxygen

- c. If a preterm infant does not initiate spontaneous respiratory efforts within 3-4 minutes after delivery, volume expansion must be given via the umbilical vein
- d. For preterm infants of less than 30 weeks of gestation, surfactant should be given before attempting any resuscitative measures

37. The USG Doppler study finding shown in the picture is associated with all the following, EXCEPT:



- a. Maternal APLA syndrome
- b. Fetal growth restriction
- c. Maternal protein C & S deficiency
- d. Gestational diabetes

38. Following are true statements about Anti-D , EXCEPT:

- a. It is a monoclonal antibody
- b. It is given within 72 hours after delivery
- c. A single dose is usually enough for the same pregnancy
- d. Kleihauer-Betke Test can be used to calculate the dose

39. The crown-rump length in the first trimester can determine gestational age to accuracy within how many days?

- a. 4 days
- b. 7 days
- c. 14 days
- d. None of the above

40. Which of the following results of a quadruple screen test would suggest an increased risk of Down's Syndrome?

- a. Low AFP, Elevated uE3, Elevated hCG, Elevated Inhibin A
- b. Low AFP, Low uE3, Elevated hCG, Elevated Inhibin A

c. Elevated AFP, Elevated uE3, Elevated hCG, Low Inhibin A

d. Low AFP, Low uE3, Elevated hCG, Low Inhibin A

41. Amnion nodosum and oligohydramnios are associated with

a. Cardiac Defect

b. Single umbilical artery

c. Pulmonary Hypoplasia

d. Duodenal Atresia

42. A 29 year-old primigravida mother who is at 37⁺³ gestational weeks develops a Varicella rash. She is previously non-immune. Three days later, she delivers a male infant. What would be the next steps in management of this infant?

a. Separate mother and infant until maternal lesions dry up. Give VZIG to infant.

b. Do not separate mother and infant. Give VZIG to infant.

c. Do not separate mother and infant. Give VZIG to infant only if infant develops a rash.

d. Separate mother and infant until maternal lesions dry up. Closely observe the infant

43. Normal newborn produces how much bilirubin (mg/kg/day) ?

A. <2

B. 2-4

C. 6-10

D. >10

44. A 2 day old neonate delivered normally by vaginal route is noted to have only conjunctival and retinal haemorrhage. The most likely reason is:

A. Force of birthing process

B. Maternal alloimmune thrombocytopenia

C. Maternal idiopathic thrombocytopenic purpura

D. All of the above

45. Hyperglycaemia in neonate is labelled when whole blood glucose level is higher than (mg/dL)

- A. 125 mg
- B. 135 mg
- C. 145 mg
- D. 155 mg

46. Which of the following is false about Hirschsprung disease?:

- A. Often presents with neonatal large bowel obstruction
- B. Is due to absence of ganglion cells in Auerbach plexus
- C. A contrast study will show dilation of aganglionic segment
- C Increased acetylcholinesterase activity is a histological feature

47. A 12 day old male neonate presented with features of lethargy, dehydration, prolonged Capillary refilling time, and raised 17 OHP. What metabolic abnormalities are expected?

- a) Metabolic acidosis, Hyponatremia and Hypokalaemia
- b) Metabolic alkalosis, Hyponatremia and Hyperkalaemia
- c) Metabolic alkalosis, Hypernatremia and Hypokalaemia
- d) Metabolic acidosis, Hyponatremia and Hyperkalaemia

48. Intergrowth Preterm Postnatal follow up study standards are used till what Postmenstrual age:

- e) 54 weeks
- f) 60 weeks
- g) 64 weeks
- h) 52 weeks

49. The third trimester intrauterine calcium and phosphorus accretion rate is: approximately:

- a) 120 mg/kg/d of calcium & 60 mg/kg/d of Phosphorus
- b) 180 mg/kg/d of calcium & 60 mg/kg/d of Phosphorus
- c) 200 mg/ of calcium & 100 mg/kg/d of Phosphorus
- d) 180 mg/kg/d of calcium & 90 mg/kg/d of Phosphorus

50. A neonate presented on day 14 of life with refractory persistent hypoglycaemia. There were no dysmorphic features. Investigations revealed severe metabolic acidosis with high lactate, urine ketosis and negative sepsis screen. What is the possible diagnosis?

- a) Organic acidaemia
- b) Glycogen storage disorder

c) Fatty acid oxidation defect

d) None of the above

51. A very preterm baby with poor head growth at term equivalent age, head ultrasound shows widespread cystic lesions extending into the parieto-occipital region, state the grade of periventricular leukomalacia:

- a) 1
- b) 2
- c) 3
- d) 4

52. A baby is born with cataracts, sensorineural hearing loss, a PDA, meningoencephalitis, microcephaly, and mental retardation. The baby has a +IgM rubella antibody in his blood. At what stage of pregnancy did this baby acquire this congenital infection?

- a) First trimester
- b) Second trimester
- c) Third trimester
- d) At the time of birth

53. Neuronal migration during brain development occurs between gestational age(weeks) of:

- a) <6
- b) 7-12
- c) 12-24
- d) >24

54. Which of the following statement is a correct ?

- a. Preterm baby should be exposed to bright red light to promote vision
- b. Preterm baby should listen to music at all times
- c. REM sleep is important for brain growth
- d. Preterm baby feels pain but does not remember it

55. Most common type of congenital heart defect in neonates is:

- A. Muscular type VSD
- B. Secundum type ASD
- C. Membranous type VSD
- D. Primum type ASD

56. A newborn has unilateral cleft lip and cleft palate. The condition is most likely result of :

- A. Failure of fusion of mandibular processes
- B. Failure of fusion of medial nasal processes
- C. Failure of fusion of maxillary processes with the medial nasal prominence
- D. Failure of fusion of lateral palatine processes with the nasal septum

57. Name the gold standard examination in diagnosis of Retinopathy of prematurity (ROP):

- a. Direct Ophthalmoscopy
- b. Indirect Ophthalmoscopy
- c. Ultra sonography of eye
- d. None of the above

58. How much is the K content in 1ml of 15% KCl solution (mEq):

- a) 1
- b) 2
- c) 3
- d) 4

59. A 7 day old male infant presented with a seizure. Serum glucose was 17 mg/dL. Examination revealed jaundice and microphallus. The most likely diagnosis is:

- a) Congenital adrenal hyperplasia
- b) Congenital hypopituitarism
- c) Congenital hypothyroidism
- d) Galactosemia.

60. Identify the incorrect teratogenic effect:

- a) Alcohol- IUGR, microcephaly, ocular abnormalities
- b) Methimazole – Scalp defects
- c) Valproate – Cranial defects
- d) Lithium – Heart and great vessel defects

61. Which one of the following is the most useful tool in the prediction of neurodevelopmental outcome for a baby with moderate hypoxic-ischemic encephalopathy (HIE)?

- a. Neurologic examination at the discharge
- b. Amplitude integrated EEG
- c. Magnetic resonance imaging
- d. Serial doppler assessment of anterior cerebral artery

62. Premature closure of which of the following sutures can cause scaphocephaly?

- a. Lambdoid suture
- b. Coronal suture
- c. Sagittal suture
- d. Metopic suture

63. Premature infants are prone to apnea. The main reason is:

- a. Preterm infants have more quiet sleep than REM sleep
- b. Hering-Breuer deflation reflex is more prominent during REM sleep
- c. Preterm infants have blunted response to CO₂
- d. GER is the most common cause of apnea in preterm infants

64. CSF report: Colorless, RBC 540, WBC 12 (51% lymph), glucose 9, protein 427. This CSF specimen is most likely obtained from:

- a. A preterm infant with post-hemorrhagic hydrocephalus
- b. A premature infant with grade I hemorrhage
- c. A term infant with bacterial meningitis
- d. A term infant with perinatal asphyxia

65. The preterm infant underwent ventricular tap. The neurosurgeon removed 32 ml of CSF and sent it for analysis that showed protein of 427 mg/dl, glucose of 13 mg/dl and gram stain was negative. The true statements about this infant are all the following, EXCEPT:

- a. Ventricular access device (VAD) is preferable to intermittent needle tap
- b. The observed hypoglycorrhachia may be due to history of IVH
- c. This infant might also benefit from acetazolamide therapy
- d. The high protein suggests the need for VP shunt earlier than later

66. Which of the following condition is likely to result in cerebral calcification and hydrocephalus in a neonate whose mother was advised spiramycin but was not compliant with the therapy?

- a. Rubella
- b. Cytomegalovirus
- c. Toxoplasmosis
- d. Herpes

67. All statements about seizure are true when compared to jitteriness, except:

- a. often associated with autonomic changes
- b. fast movements of equal amplitude
- c. has both fast and slow components
- d. does not stop with a restraint

68. By what gestational age(weeks) , premature infants are expected to have a pupillary light response?

- a. 24
- b. 28
- c. 32
- d. 36

69. The antenatal intervention that has been associated with a reduction in IVH is:

- a. Corticosteroids
- b. Indomethacin
- c. Magnesium sulphate
- d. All of the above

70. A newborn with severe hyperbilirubinemia(33 mg/dL bilirbin levels) presented with opisthotonus and seizures. As part of this infant's disease, which of the following is LEAST likely to occur?

- a. Athetoid cerebral palsy
- b. Auditory dysfunction
- c. Paralysis of upward gaze
- d. Severe cognitive impairment

71. Term otherwise healthy neonate fed with cow's milk, presented with seizures on day 5 of life.

What is the most likely cause?

- a. Hypoglycemia
- b. Late onset sepsis
- c. Botulism
- d. Hypocalcemia

72. Arnold-Chiari malformation and Dandy-Walker syndrome are both congenital abnormalities of the posterior fossa. Which of the following is a feature of Arnold-Chiari malformation and NOT Dandy-Walker syndrome?

- a. Enlargement of the fourth ventricle
- b. Herniation of the cerebellar tonsils
- c. Posterior fossa cyst

d. Hypoplasia of cerebellar vermis

73. Which of the following statements is FALSE :

a. A crossed adductor response accompanying the knee jerk reflex is normal

b. Clonus in a newborn is usually a sign of pathology

c. Newborn reflexes should always be symmetric

d. The plantar response is of limited value in the newborn

74. 1 day old female infant who was born by a difficult forceps delivery is alert and active. She doesn't move her left arm and keeps it internally rotated by her side with the forearm extended and pronated. Which of the following is an expected clinical finding?

a) Intact Moro and grasp reflex.

b) Absent Moro and grasp reflex.

c) Intact Moro and absent grasp reflex

d) Absent Moro and intact grasp reflex.

75. Hypomyelination associated with PVL is most likely caused by injury to which stage of the oligodendrocyte's life cycle?

a. Immature oligodendrocyte

b. Mature oligodendrocyte

c. Oligodendrocyte progenitor

d. Pre-oligodendrocyte

76. A female infant is born at 40 weeks' gestation following vacuum extraction. The infant's pediatrician identifies a swelling over the infant's scalp. The swelling is boggy and soft. It is predominantly over the left parietal region, but extends slightly across to the right parietal region, and down behind the left ear. The pinna of the left ear is slightly pushed forward from the swelling. Of the following, the most likely diagnosis in this infant is:

a. Caput succedaneum

b. Cephalohematoma

c. Subdural hematoma

d. Subgaleal hemorrhage

77. Which of the following statements about seizures in neonates is FALSE?

a. Hypoxic-ischemic encephalopathy is the most common cause of neonatal seizures.

b. Seizures occur most often in the neonatal period compared with any other period in life.

c. The drugs available to treat neonatal seizures are very effective.

d. There is no consensus whether to treat subclinical seizures

78. Which of the following statements about Phenobarbital is FALSE?

a. Many infants require sequential loading doses to improve clinical responsiveness.

b. Phenobarbital remains the drug of first choice for suspected seizures in neonates.

c. Seizure response after the initial loading dose is greater than 90%.

d. There is evidence that Phenobarbital increases neuronal apoptosis

79. Which of the following statements about brain development in the last trimester of pregnancy is FALSE?

a. 25% of cerebellar development occurs in the last trimester.

b. Brain weight at 34 weeks' gestation is only 65% of that of term brain.

c. Gyration and sulcation are complete by 34 weeks' gestation.

d. The cortical surface increases by 50% during the last trimester.

80. Polyhydramnios is frequently observed in all the following conditions, except:

a. Esophageal atresia

b. Duodenal atresia

c. Hirschsprung's disease

d. Congenital diaphragmatic hernia

81. An infant is noted to have a left flank mass shortly after birth and an ultrasound examination revealed only left sided hydronephrosis. The most likely cause for hydronephrosis could be:

a. Wilms's tumor

b. Congenital PUJ obstruction

c. Multicystic dysplastic kidney

d. Vesicoureteral reflux

82. The most common type of congenital diaphragmatic hernia is caused by

a. Eventration of the diaphragm in the fetus.

b. A defect through the space of Larrey.

c. An abnormally wide esophageal hiatus.

d. A defect through the pleuroperitoneal fold.

83. A term female infant develops bilious vomiting at 48 hours of age. She has not passed meconium and her abdomen is extremely distended. Physical examination shows a normal appearing perineum. Abdominal radiograph shows dilated small and large bowel with absence of rectal air. No other anomalies are apparent. Of the following, the MOST likely diagnosis in this infant is:

- a. Ileal atresia
- b. Duodenal atresia
- c. Hirschsprung disease
- d. None of the above

84. A male fetus with an intestinal atresia has an intrauterine intestinal perforation at 28 weeks' gestation. What is the most likely radiographic finding after birth?

- a. Dilated bowel loops
- b. Intra-abdominal calcifications
- c. Paucity of bowel gas
- d. Portal venous gas

85. A 2-day old infant who was born at 26 weeks' gestation has a spontaneous intestinal perforation. All of the following are risk factors, EXCEPT:

- a. Initiation of feeding with preterm formula instead of breast milk
- b. Mechanical ventilation for surfactant deficiency
- c. Postnatal steroid exposure
- d. Prior indomethacin to close a patent ductus arteriosus

86. Which of the following statements about Congenita hypertrophic pyloric stenosis(CHPS) is FALSE?

- a. Is more common in males than in females
- b. The classic metabolic derangement associated with is Hypochloremic hyperkalemic metabolic acidosis
- c. The risk of having a child with CHPS is greater if the mother has a prior history of pyloric stenosis instead of the father having a prior history of pyloric stenosis
- d. It has been associated with blood group types O and B

87. What is the mean postmenstrual age at which preterm infants tend to develop NEC ?

- a. 26-28 weeks
- b. 28-30 weeks

- c. 30-32 weeks
- d. 32-34 weeks

88. Meconium stained amniotic fluid is rare prior to what gestation(weeks)?

- a. 34
- b. 36
- c. 38
- d. 40

89. "Choosing Wisely in Newborn Medicine" initiative was started by AAP for?

- a. Antireflux medications
- b. Antifungal medications
- c. Vitamin D supplementation
- d. Multivitamin supplementation

90. Bone marrow becomes major site of hematopoiesis at what gestational age(weeks) :

- a. 20
- b. 24
- c. 28
- d. 32

91. Calculate the amount of FFP needed in ml for 1 kg preterm infant with hematocrit of 55%. The desired increment in given clotting factor is 30%.

- a. 15
- b. 30
- c. 45
- d. 60

92. Leucocyte adhesion defect is diagnosed by flow cytometric analysis of deficiency of which of following:

- a. CD16
- b. CD18
- c. CD22
- d. CD45

93. The concept of "First Golden minute" at birth means –

- a) Initial steps be completed within 1 minute
- b) PPV should be completed in 1 minute
- c) PPV should be initiated by not more than 1 minute of birth
- d) Baby should establish cry within 1 minute

94. A 34 week newborn is being supported by positive pressure ventilation for gasping respiration. You ask for pulse oximeter to be placed on the baby. Till that time what would be the oxygen delivery you would initiate –

- a) 21%

- b) 21-30%
- c) You would decide after the oxygen saturation readings
- d) 100%

95. The best way to provide respiratory support while providing chest compressions is via

- a) Laryngeal mask airway
- b) T piece resuscitator
- c) Intubation and ventilation by any device
- d) None of the above

96. All of the following are markers for risk for fetal aneuploidy, except :

- a) Thickened nuchal fold
- b) Echogenic bowel
- c) Mild hydronephrosis
- d) Echogenic focus in the heart

97. A mother had venous thrombosis during pregnancy. Which of the following drugs is not compatible with breast feeding-

- a) Warfarin
- b) Aspirin
- c) Low molecular weight heparin
- d) Clopidogrel

98. The walking reflex normally disappears by what post natal age(months):

- a) 3
- b) 5
- c) 7
- d) 9

99. You are called to see an infant whose newborn screening study has tested positive for galactosemia. The infant is now 8 days old and has been fed formula since birth. Which of the following laboratory tests would be most helpful in making the diagnosis?

- a) Blood glucose determination
- b) Liver enzyme determination
- c) Fundus evaluation
- d) Urine for reducing substances

100. All of the following factors predict neuro-developmental outcome in hypoglycemia except-

- a) Duration of hypoglycemia
- b) Blood glucose value
- c) Symptomatic infant
- d) Repetitive occurrence of hypoglycemia

