



IAP Neonatology Chapter

IAP Neonatology Fellowship Exam Feb 2025

Theory Paper 1

Time: 3hours

Total Marks–100

- **Attempt all questions.**
- **Write in legible handwriting.**
- **Write answers to the point.**
- **Quote evidence / studies wherever required.**

Question 1: Write short notes on: (20 marks)

- PPROM management and indications for delivery with justification (5)
- Stages of lung development and associated anomalies (5)
- Umbilical cord milking – evidence, controversies and consensus (5)
- Non-shivering thermogenesis and thermal management of extreme preterm from birth to discharge(5)

Question 2: Write short notes on the following: (20 marks)

- SUPC (Sudden unexpected postnatal collapse) (5)
- Five methods to confirm endotracheal tube position (5)
- Genomic approach to neonatal seizures (5)
- Key behavioral skills in NRP (5)

Question 3: Illustrate the following using tables / flow chart (20 marks)

- Management of refractory hypoglycemia in neonates (5)
- Pharmacological interventions in PPHN – mechanisms of action, limitations and side effects (5)
- Management of unexpected severe anemia at birth (5)
- Core measures of DSC (5)

Question 4: Elaborate on (20 marks)

- Infection prevention & control measures in NICU (5)
- Five moments of hand hygiene by WHO (5)
- CLABSI prevention in detail (5)
- IVH bundle (5)



Question 5: Choose the most appropriate answer (20 marks - 1 mark for each MCQ)

- 1. A term newborn with severe perinatal asphyxia is admitted in NICU. Umbilical arterial blood is pH 6.7, pCO₂ 127mmHg, pO₂ 16 mm Hg, base deficit of 19 meq/l. What is your interpretation of this blood gas?**
 - a. Respiratory acidosis
 - b. Metabolic acidosis
 - c. Mixed respiratory and metabolic acidosis**
 - d. Mixed respiratory and metabolic acidosis with hypoxemia

- 2. How many calories are needed in a baby on total parenteral nutrition to achieve a growth rate of 15-20 gm/kg/day?**
 - a. 90-100 kcal/kg/day**
 - b. 60-80 kcal/kg/day
 - c. 110-130 kcal/kg/day
 - d. 140-160 kcal/kg/day

- 3. 27 week, 2 days old baby delivered by LSCS in view of worsening maternal pre-eclampsia, needed intubation & surfactant administration & is on TPN. Baby is receiving ibuprofen for hemodynamically significant PDA. Which of the following statements reflects an evidence- based decision related to initiation of enteral feeding in this baby?**
 - a. TPN is providing all the necessary nutrition to this baby, enteral feeds should be delayed until the infant is no longer at risk of developing NEC.
 - b. Feedings can't be initiated until both umbilical lines are removed.
 - c. Feedings can be initiated using half strength human milk or premature formula at 40-60 ml/kg/day
 - d. Trophic or minimal enteral feedings (10 -20/kg/day) with full strength human milk should be initiated today.**

- 4. A 3 kg term baby is delivered vis LSCS to a primi with unremarkable history. Baby is mildly tachypneic, but there is no grunting. There is no risk factors for infection. At 5 minutes of life, pre-ductal saturation on room air is 92% and the post-ductal value is 84%. What is the best course of action for this baby?**
 - a. Continued observation**
 - b. Start oxygen therapy
 - c. Admit in NICU & start CPAP
 - d. Do ABG

- 5. Which of the following is FALSE regarding immune hemolytic disease of the newborn?**



- a. Rh and ABO incompatibility are major causes
 - b. Indirect and direct antiglobulin tests are done in neonate and mother respectively
 - c. Spherocytes in peripheral smear is likely indicative of ABO hemolytic disease of newborn
 - d. Estimation of fetal anemia can be done non-invasively by peak systolic velocity in middle cerebral artery
6. Which of the following doesn't have a negative score in the New Ballard scoring for gestational assessment?
- a. Posture
 - b. Square window
 - c. Popliteal angle
 - d. Scarf sign
7. In red zone (high risk) group of post-hemorrhagic ventricular dilatation (PVHD) risk stratification, the key criteria cut off for Anterior Horn Width(AHW) is
- a. AHW >6 mm
 - b. AHW >8 mm
 - c. AHW >10 mm
 - d. AHW > 12 mm
8. A 4 week old exclusively breastfed infant came with the complaints of persistent jaundice. On examination, baby is icteric up to legs, alert, afebrile and gaining weight with total serum bilirubin of 12.8 mg/dl (direct 0.6 mg/dl). Most appropriate management for this child is
- a. Start phototherapy and stop breastfeeding
 - b. Reassure mother and continue breastfeeding
 - c. Perform liver function test and ultrasound of abdomen
 - d. HIDA scan
9. A female fetus with an intestinal atresia has an intrauterine intestinal perforation at 27 weeks of gestation. What is the most likely postnatal radiographic finding?
- a. Dilated bowel loops
 - b. Intra-abdominal calcifications
 - c. Paucity of bowel gas
 - d. Pneumatosis
10. In a population of 1000 neonates, 100 neonates have a specific disease and 900 do not have this disease. 180 babies have positive test results even though 100 of these infants do not actually have the disease. What is the specificity of this screening test?
- a. 40%
 - b. 80%



- c. 89%
- d. 97%
11. A 10 day old male infant born at 25 weeks gestation is receiving TPN through a PICC line. He suddenly presents with tachycardia, narrow pulse pressure, weak pulses, prolonged CRT, reduced urine output and muffled heart sounds. Chest xray shows cardiomegaly. Which of the following types of shock is most likely here?
- Dissociative
 - Distributive
 - Flow-restrictive
 - Hypovolemic
12. Calculate the AaDO₂ of a term baby with meconium-stained liquor on HFOV- MAP 14, FiO₂ 80%, Frequency 10 Hz; amplitude 30. Baby is saturating 92% and his PaO₂ is 54 mm Hg and PCO₂ is 58 mm Hg
- 458
 - 512
 - 650
 - 720
13. The following inactivated vaccines may be used in pregnancy
- Influenza
 - Pertussis
 - RSV
 - All of the above
14. Which pain score/scales can be used in babies who are ventilated
- PIPP and CRIES
 - NPASS and PIPP
 - NPASS and COMFORT neo
 - CRIES and COMFORT neo
15. A female is born with a single perineal opening. An abdominal mass is also felt on examination. In the newborn period, which of the following poses the greatest threat to the patient's renal health and requires urgent identification and management?
- Hydrocolpos
 - Tethered cord



- c. Urinary tract infection
- d. Aberrant renal vasculature

16. Parents are worried about multiple cafe-au-lait spots (8 number and 3 mm in size) on their newly born daughter. What will you counsel them?

- a. Immediately advise for genetic testing
- b. Follow up the infant closely
- c. Number is less than 10 so just reassure them
- d. No family history rules out neurocutaneous syndromes

17. Statistical test to look for agreement between two methods

- a. Bland Altman test
- b. Mann Whitney test
- c. Pearson's correlation
- d. Chi square test

18. Which among the following does not reduce intraventricular hemorrhage (IVH) in preterm infants

- a. Antenatal steroids
- b. Antenatal magnesium sulphate
- c. Delayed cord clamping
- d. None of the above

19. Which one of the following is not a component of BIND score?

- a. Eye movements
- b. Mental state
- c. Muscle tone
- d. Cry

20. A 3 kg breastfed baby has persistent jaundice at 2 weeks of age and constipation. On physical examination, baby has hypotonia and umbilical hernia with an open posterior fontanelle. Most likely diagnosis is

- a. Crigler-Najjar syndrome
- b. Gilbert disease
- c. Biliary atresia
- d. Hypothyroidism