



IAP Neonatology Chapter
IAP Neonatology Fellowship Exam October 2020

Theory Paper 1

Time – 3 hours

Total Marks – 100 (80+20)

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

Question No. 1: (20 Marks)

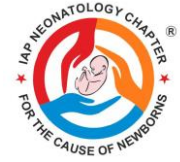
- a) Enumerate the various methods to provide oxygen to neonates describing their relative advantages and disadvantages (5)
- b) Describe the principle of pulse oximeters and limitations of pulse oximetry (3+2)
- c) Discuss evidence on oxygen saturation targeting in preterm neonates mentioning technical limitations faced in the conduct of the studies (5)
- d) Elaborate on practical steps to improve compliance to oxygen saturation targeting among doctors nurses in your unit (5)

Question No. 2: Write short notes on: (20 marks)

- a) Management of refractory hypoglycaemia in neonates (5)
- b) Causes of non-immune hydrops fetalis (5)
- c) Types of human milk fortification for preterm neonates (5)
- d) Drugs used in treatment of hemodynamically significant Patent ductus arteriosus in preterm neonates (5)

Question No. 3: Write short notes on: (20 marks)

- a) Magnesium sulphate for fetal neuro-protection (5)

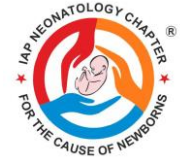


- b) FNAIT (fetal neonatal alloimmune thrombocytopenia): pathogenesis and management (2+3)
- c) TPN (total parenteral nutrition) in neonates: Indications and general guidelines (2+3)
- d) Septic arthritis in neonate: etio-pathogenesis and management (2+3)

Question No. 4: Write short notes on: (20 marks)

- a) 'LaQshya' (Labour room quality improvement) initiative (5)
- b) CLABSI bundle (5)
- c) High risk infant skin assessment and steps to prevent skin injury (2+3).
- d) Sensitivity and specificity of screening test. ROC curve (2+3).





MCQ's

Attempt all questions. Total Marks =20 (1X20)

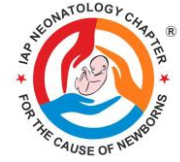
1. A 6-day old term female neonate with birth weight 3000 grams was brought with history of fever and seizures on day 4 of life. On examination she had hypotonia, normal AF, lethargy, flushed extremities and hyperpigmented skin. Investigations showed hyponatremia and severe thrombocytopenia. Which investigation would clinch the diagnosis?
 - a. Serum cortisol
 - b. Thyroid profile
 - c. Chikungunya PCR
 - d. Dengue IgM Elisa

2. Hyperglycinemia is associated with which of the following conditions?
 - a. NKH
 - b. Propionic academia
 - c. Isovaleric academia
 - d. All the above

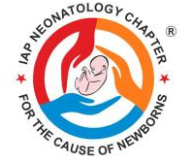
3. A 10-day old neonate was found to have polyuria, constipation, irritability, vomiting, increased tone and poor weight gain. Which electrolyte imbalance would be the most likely cause in this neonate
 - a. Hypocalcemia
 - b. Hypokalemia
 - c. Hypercalcemia
 - d. Hyponatremia

4. Which of the following statements is false regarding TORCH infections –
 - a. TORCH IgG positivity is suggestive of active infection
 - b. Hydrocephalus can be feature of HSV infection in neonates
 - c. Enterovirus is well known to cause myocarditis in neonates
 - d. Lissencephaly is seen with Congenital ZIKA virus infection

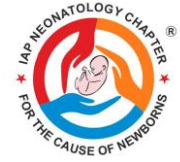
5. Which of the following leucocyte biomarkers has best sensitivity for neonatal sepsis –
 - a. Absolute neutrophil count
 - b. Absolute band cell count



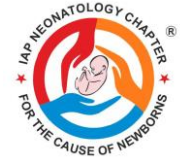
- c. Total leucocyte count
d. I-T ratio
6. A 10-day neonate was brought with history of repeated episodes of paroxysmal cough, apnoea and intermittent cyanosis. On examination peripheral pulses were well felt, normal BP and normal SpO₂. On investigation there is lymphocyte predominant leucocytosis. The following intervention would have prevented this condition –
- a. Pulse oximetry test prior to discharge
b. Hyperoxia test
c. Tdap vaccination for mother
d. Flu vaccine for mother
7. Which plot is used to determine publication bias in a meta-analysis?
- a. Forest plot
b. Pareto chart
c. Funnel plot
d. Run chart
8. A preterm neonate is born at 26 weeks with a birth weight of 850 grams, Which of the following may increase the risk of early death?
- a. Delivery room CPAP
b. Sustained inflations in DR
c. Surfactant administration
d. NIMV
9. Which is the most appropriate statement about neonatal seizures
- a. Tonic seizures may occur with IVH
b. Most common cause of seizures is Hypoglycemia
c. Subtle seizures have 100% EEG correlation
d. The most common type of neonatal seizures is tonic
10. 'MAA' program was launched by MoHFW, Government of India in August 2016. What is the main goal of the program?
- a. Improve institutional delivery rates
b. Improve exclusive breastfeeding rates
c. Improve antenatal steroids coverage rates
d. Improve universal immunization rates



11. SP-A, SP-B, SP-C and SP-D are four surfactant proteins. Which statement is true?
- SP-C is a hydrophilic protein of mass about 22-kDa
 - SP-B is not present in lamellar bodies
 - SP-D helps in adsorption of surfactant
 - SP-A helps in formation of tubular myelin
12. Baby 'X' born at 42 weeks is ventilated in SIMV mode for MAS, with settings PIP 25 cm H₂O, PEEP 4 cm H₂O, Ti 0.4 seconds, FiO₂ rates 60/minute, MAP 12.5 cm H₂O and FiO₂ 80%. ABG analysis showed Ph 7.28, PCO₂ 45 mbar, PO₂ 40 mbar, bicarb 16.5 mmol/l and base excess -5. Calculate OI.
- 15
 - 20
 - 25
 - 30
13. BAMR (Bilirubin albumin molar ratio) is calculated by [Bilirubin in mg/dl] / [Albumin gm/dl]. What is the BAMR cut-off for predicting bilirubin encephalopathy and indication for exchange transfusion?
- 6
 - 7
 - 8
 - 9
14. ALPS trial (antenatal steroids for women at risk of late preterm delivery) outcomes showed:
- Still birth or neonatal deaths were low in betamethasone group
 - Neonatal hypoglycemia was high in betamethasone group
 - Mechanical ventilation or ECMO requirement was low in betamethasone group
 - Pneumothorax was high in betamethasone group
15. Root cause of quality issues are analyzed using 4P's. What does 4P's stand for?
- Protocol, parameter, prevalent and plausible
 - Product, price, promotion and place
 - People, policy, procedure and places



- d. Problem, prioritize, plan and perform
16. Which of the following is a “critical” item as per Spaulding classification of medical devices with regards to sterilisation and disinfection?
- Laryngoscope
 - Umbilical vein cannula
 - Rectal Thermometer
 - Pulse oximeter probe
17. You have ordered for blood glucose monitoring for a term large for gestation neonate who was born to a primi mother with gestational diabetes mellitus. The nurse calls to tell you that the heelstick blood sugar at 4 hours of life is 16 mg%. What would be your most appropriate immediate plan of management?
- Request the mother to immediately breast feed the baby, and reassess sugar after 30-60 minutes
 - Insert intravenous line, draw sample for laboratory blood sugar check and administer iv dextrose
 - Order for a formula feed to be given immediately, and reassess after 30 minutes
 - Insert Umbilical vein cannula and start 25% dextrose infusion
18. What is the formula for relative risk (RR)?
- (Incidence of outcome in exposed)- (Incidence of outcome in unexposed)
 - Incidence of outcome in exposed / Incidence of outcome in unexposed
 - (Incidence of outcome in exposed – Incidence of outcome in unexposed) / Incidence of outcome in unexposed
 - Odds of outcome in exposed / Odds of outcome in unexposed
19. A neonate presents with pallid appearance, severe respiratory distress, poor peripheral pulses; on day 12 of life. He is noted to have a heart rate of 310/min. ECG is done which shows no clear P waves, Narrow complex tachycardia with regular RR interval. What would be the best first-line of management?
- Synchronised DC Cardioversion
 - IV Adenosine through peripheral cannula
 - IV amiodarone infusion
 - Facial cold water / ice immersion



20. A sample for karyotyping in an infant with ambiguous genitalia should be taken in which vial?

- a. Lavender/ pink topped EDTA vial
- b. Green topped Sodium heparin vial
- c. Grey topped Sodium fluoride vial
- d. Red topped Serum vial with clot activator

