**QUESTION BANK**

**Jaundice**

1. Management of jaundice in more than 35 weeks babies
2. Management of jaundice in preterm babies
3. Transcutaneous bilirubinometer - limitations and uses
4. Approach to a case of neonatal cholestasis
5. Bilirubin metabolism
6. Treatment of neonatal jaundice
7. Acute and chronic bilirubin encephalopathy
8. Prolonged unconjugated jaundice
9. Mechanism of action of phototherapy & pharmacological treatment in hyperbilirubinemia.
10. Approach to Neonatal Cholestasis

**Cardiac**

1. Clinical features and echo diagnosis of PDA
2. Medical treatment of PDA
3. Pitfalls of surgical ligation of PDA
4. Congenital heart disease and pulse oximeter screening
5. Prostagladin use in neonates
6. Approach to a neonate with cyanosis
7. Management of arrthymias in neonates
8. Congenital heart block
9. Approach to a neonate with hypotension
10. Approach to a neonate with hypertension

**Respiratory system**

1. Define Respiratory distress, clinical scoring systems and Respiratory failure
2. Differential diagnosis of Respiratory distress in term newborn
3. Differential diagnosis of Respiratory distress in preterm newborn
4. Pathophysiology and diagnosis of TTNB
5. Respiratory Distress Syndrome, clinical features, diagnosis and management strategies
6. Meconium Aspiration Syndrome
7. Air leak Syndromes, etiology, diagnosis and management
8. Non invasive ventilation in neonates
9. Apnea of Prematurity
10. Prevention of RDS
11. Management of child with difficult airway
12. Chronic lung disease - pathophysiology, prevention, treatment
13. Noninvasive respiratory system monitoring in neonates
14. Risk factors, common organisms and treatment of congenital pneumonia.
15. PPHN diagnosis and principles of management
16. Surgical disorders –
    1. Oesophageal atresia
    2. Congenital diaphragmatic hernia
    3. Congenital Cystic adenomatoid malformation and other lung lesions
17. CPAP
    1. a. Physiology and mechanism of action

b. Indications

c. Methods and CPAP devices

d. Evidence of its Use

e. Success and Failure

f. Complications

g. Nursing care

1. Mechanical Ventilations
2. Indications
3. Initiation of Ventilation
4. Ventilation strategies of RDS, MAS and Asphyxia
5. Weaning and Extubation
6. Complications related to ventilation including BPD, Ventilator associated Peumonia
7. Approach to a neonate with sudden desaturations on ventilator
8. Common modes of Pressure controlled Ventilation – IMV, SIMV, AC, PSV
9. Nursing care of a neonate on ventilator
10. Lung protective strategies
11. High frequency ventilation
12. Permissive hypercapnia
13. Nitric oxide
14. Volume ventilation
15. Interpretation of ABG
16. Exogenous  Surfactant Therapy

a. Indications

b. Physiological Benefits

c. Timing Dosage and Method of administration of different surfactant

d. Composition

e. Newer surfactants

f. Non RDS uses of surfactant

**Central Nervous System**

1. Neonatal Seizures – Etiologies and management
2. Differential diagnosis of Neonatal Encephalopathy
3. Hypoxic Ischemic encephalopathy
4. Intrauterine assessment
5. Risk factors
6. Mechanisms of Injury
7. Major neuropathological varieties
8. Clinical features, Diagnosis and Staging
9. Role of Neuroimaging
10. Prognostic factors
11. Principles of management
12. Intraventricular Hemorrhage in Preterm
13. Risk factors
14. Mechanisms of Injury
15. Diagnosis and Grading
16. Role of Neuroimaging
17. Prognostic factors
18. Principles of management
19. Preventive Strategies
20. Posthemorrhagic Hydrocephalus
21. Periventricular Leukomalacia
22. Mechanism of brain Injury
23. Neuropathological correlates
24. Long term outcome
25. Intracranial Hemorrhage in Term infants
26. Prevention and Management of Hypoglycemic brain injury
27. Bilirubin induced brain injury, its mechanism, clinical features and prevention
28. Differential diagnosis and evaluation of Floppy neonate
29. Etiology, diagnosis and treatment of Meningitis
30. Short notes on CNS Malformations
31. Encephalocele
32. Neural tube defects
33. Holoprosencephaly
34. Schizencephaly
35. Lissencephaly
36. Congenital Hydrocephalus
37. Importance and indication of BERA and OEA in Neonates
38. Room air versus 100% oxygen resuscitation
39. Neuroprotective strategies for preterm brain
40. Neuroimaging in NICU
41. Importance of nutrition for neonatal brain
42. Caffeine and neurodevelopment outcome
43. Developmentally supportive care
44. Designing a follow up program for NICU
45. Neurodevelopmental follow up
46. Counseling parents on long term neurodevelopmental outcome

**Gastroenterology and nutrition**

1. Necrotizing enterocolitis
   1. Clinical features and diagnosis of NEC
   2. Probiotics in NEC
   3. NEC in term babies
   4. Feeding practices in NEC
   5. Transfusion associated NEC
   6. Intestinal microcirculation and NEC
   7. Neurodevelopmental outcome of NEC in preterm infants
   8. Surgical mangement of NEC
2. Gastroesophageal reflux
   1. Diagnosis and management of GER in infants
   2. GER and apnea - relation
3. Management of Feeding intolerance in preterms
4. Gastrointestinal surgical emergencies in neonates
5. Medical management of Tracheo esophageal fistula
6. Disorders of umbilicus
7. Approach to a child with bilious vomiting
8. Approach to a neonate with abdominal distension
9. Nutrition
   1. Enteral nutrition in preterms
   2. Total parenteral nutrition
   3. Early aggressive nutrition in neonates
   4. Post discharge nutrition in NICU
   5. Barkers hypothesis
   6. Non nutritive sucking
   7. Donor human milk
   8. Bovine milk for human nutrition
   9. Human milk fortifier
   10. Growth Charts and Growth monitoring
   11. Feeding of babies with abnormal doppler
   12. Metabolic Bone Disease
   13. Protein needs of the preterm babies
   14. Anorectal malformations

**Obstetrics and Perinatology**

1. Preterm labour and its management
2. Infant of diabetic mother
3. Pregnancy induced hypertension
4. Assisted reproductive technology and neonatal outcome
5. Doppler indices and its relevance for neonatal management
6. Assessment of fetal well being and Intrapartum management
7. Examination of placenta and umbilical cord
8. Maternal nutrition and its impact on fetal outcome
9. Obstetrical analgesia and Neonatal outcome
10. Delayed cord clamping
11. Cord blood gas analysis for prediction of outcome.
12. Evidence based antenatal interventions for decreasing perinatal mortality.
13. Antenatal and immediate postnatal management of Rh isoimmunisation
14. Significance of soft markers on level II scan.
15. Antenatal steroids – (i) evidence (ii) controversies.
16. Congenital CMV infection.
17. Usefulness of APGAR score in current day neonatology
18. Approach to neonate born to a mother with HIV

**Preventive and Community Neonatology**

1. What is the new-born component of NRHM. Discuss the strengths and weaknesses of this programme.
2. Describe the burden of low birth weight neonates in India and national strategies to improve their outcome.
3. Describe the rationale, scope of interventions and the strategy for implementation of the Janani Shishu Suraksha Karyakram (JSSK).
4. Describe the rationale, components and monitoring strategies for home based neonatal care programme.
5. A district hospital has an annual delivery rate of 8000. Describe the setting up of a special care new-born unit at this facility.
6. Describe the configuration and services of a New-born Stabilisation Unit.
7. Current Perinatal & Neonatal Mortality Rates in our country. Identify the existing challenges faced in their reduction and evidence based strategies to reduce the same.
8. Describe research priorities for reducing perinatal and neonatal morbidity and mortality in India.
9. Describe strategies for prevention of intravascular catheter related infections.
10. Discuss strategies to prevent hospital acquired infections.
11. Evidence based strategies for prevention of mother to child transmission of HIV.
12. Describe components of a comprehensive new-born screening programme and status of newborn screening in India.

**Metabolic**

1. Neonatal metabolic screening
2. Congenital adrenal hyperplasia
3. Screenig stratergies and managment of congenital hypothyroidism
4. Approach to a diagnosis of IEM
5. Emergency managment of a neonate with suspected IEM
6. Neurological disorders presenting as IEM
7. Define Hypoglycemia in newborn. Discuss Cornblath threshlold for management of hypoglycemia in newborn?
8. Describe stepwise treatment if hypoglycemia in a newborn?
9. Electrolyte imbalance - hypo and hypernatremia, kalemia, calcemia and magnesiumia
10. What are the causes of hyperglycemia? How will you manage a case of hyperglycemia
11. What is persistent hypoglycemia? Describe management of persistent hyperinsulinimic hypoglycemia
12. Describe urea cycle disorders and discuss the management of severe hyperammonemia?

**Fluid, Electrolytes, Acid Base disorders in newborns**

1. What are the principles of Fluid & Electrolyte therapy in neonates?
2. Write short notes on
   1. Insensible water loss in neonates & its clinical significance
   2. Goals of Fluid & Electrolyte therapy in neonates
   3. Monitoring of Fluid & Electrolyte therapy

1. Discuss principles of Fluid & Electrolyte therapy in following conditions
   1. Perinatal asphyxia
   2. PDA
   3. Diarrhea & dehydration
   4. Severe CLD
   5. TTNB
2. Etiology and management of metabolic acidosis with increased anion gap.

**Renal**

1. Acute and chronic renal failure in neonates
2. Approach to a child with antenatal hydronephrosis
3. Posterior urethral valve

**Hematological**

1. Approach to a neonate with early and late anemia
2. Approach to a neonate with thrombocytopenia
3. Approach to a neonate with bleeding
4. Rh Isoimmunization
5. Hemorrahgic disease of the newborn

**Infections**

1. Diagnostic tests for neonatal sepsis
2. Rational antimicrobial therapy
3. Adjunct therapy for neonatal sepsis
4. Intrauterine infections
5. Disinfection routine in NICU
6. Approach to a neonate born to a mother with TB and mother with HIV.
7. Fungal infections in neonates including flucanazole prophylaxis
8. Antifungal therapy in neonates

**Miscellaneous**

1. Pain management in NICU
2. Approach to a neonate with conjunctivitis
3. New NRP guidelines
4. Informed consent
5. Managing a death in NICU
6. Lactation failure
7. Exchange transfusion
8. Methods of gestational age assessment
9. Thermoregulation in neonates
10. Immunization in preterm infants
11. Kangroo mother care
12. Birth injuries and birth trauma
13. Developmental dysplasia of hip
14. Approach to a neonate with fetal hydrops
15. Fever in a neonate
16. Disorders of umbilicus in neonates
17. Plagiocephaly
18. Hearing assessment in neonates
19. Visual follow up of NICU graduates including ROP
20. IUGR neonates - immediate and late problems
21. Twin pregnancy
22. Undescended testes
23. Optimum timing of cord clamping
24. Role of Postnatal steroids in Neonatology