

[LB 083]

AUGUST 2012

Sub. Code: 1453

D.M – NEONATOLOGY

Paper – III CLINICAL NEONATOLOGY AND
NEONATAL INTENSIVE CARE INCLUDING NEONATAL TRANSPORT

Q.P. Code: 161453

Time: 3 hours
(180 Min)

Maximum: 100 marks

Answer ALL questions in the same order.

I. Elaborate on:

Pages Time Marks
(Max.)(Max.)(Max.)

- | | | | |
|--|----|----|----|
| 1. Write in detail about the Pathophysiology, clinical features and recent advances in the management of Chronic Lung disease. | 16 | 35 | 15 |
| 2. Describe a structured approach to the diagnosis and management of Congenital Cyanotic Heart Disease. | 16 | 35 | 15 |

II. Write notes on:

- | | | | |
|---|---|----|---|
| 1. Patient triggered ventilation. | 4 | 10 | 7 |
| 2. Periventricular leukomalacia. | 4 | 10 | 7 |
| 3. Rationale of EEG in newborns. | 4 | 10 | 7 |
| 4. Scoring for pain and management of procedure related pain in neonates. | 4 | 10 | 7 |
| 5. Principles of parent education and support in NICU. | 4 | 10 | 7 |
| 6. Differential diagnosis for hematuria in newborn. | 4 | 10 | 7 |
| 7. Enteral feeding technique in VLBW babies. | 4 | 10 | 7 |
| 8. Algorithm for evaluation of disorders of sexual differentiation. | 4 | 10 | 7 |
| 9. Follow up program for a NICU graduate. | 4 | 10 | 7 |
| 10. Antibiotic resistance in NICU. | 4 | 10 | 7 |

(LD 083)

AUGUST 2013

Sub. Code:1453

D.M. – NEONATOLOGY
Paper – III CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE CARE
INCLUDING NEONATAL TRANSPORT
Q.P.Code: 161453

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Diagnostic approach to anaemia in the newborn and its management. Discuss blood transfusion guidelines in a neonate.
2. Organization of neonatal transport services in our country.

II. Write notes on:

(10X7=70)

1. Ventilation induced lung injury
2. Management of CCF in newborn.
3. Clinical presentation and management of septic arthritis.
4. Hypothermia for management of Hypoxic ischemic encephalopathy.
5. Discuss the use of Probiotics in preterm babies.
6. Components of Kangaroo care and issues in implementing it.
7. Early markers of neonatal sepsis.
8. Transient disorder of thyroid function and Universal thyroid screening in newborn.
9. Neonatal resuscitation in special situations.
10. Clinical presentation and management of posterior urethral valve.

D.M. – NEONATOLOGY

**Paper – III CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE CARE
INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 marks

I. Elaborate on:

(2X15=30)

1. Diagnostic criteria, pathogenesis and prevention of Broncho pulmonary Dysplasia.
2. Approach to a neonate presenting with central cyanosis.

II. Write notes on:

(10X7=70)

1. Catch up growth of IUGR babies-controversies.
2. How will you manage a baby born to a mother with ITP?
3. Approach to a neonate with anorectal malformations.
4. Compassionate care for a terminally ill baby.
5. Warm chain.
6. Permissive hypercarbia
7. Recommendations for hand hygiene practices in NICU.
8. Paracetamol versus ibuprofen in medical closure of PDA.
9. Compare and contrast- Self inflating bag, flow inflating bag and T- piece resuscitator.
10. End tidal CO₂ monitoring.

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Strategies for prevention of ventilator associated pneumonia.
2. Discuss how the knowledge of pathogenesis guides management of retinopathy of prematurity.

II. Write notes on: **(10 x 7 = 70)**

1. The role of functional Echocardiography in neonatal intensive care.
2. Improving the use of human milk during and after the NICU stay.
3. Ethics and sex assignment in disorders of sexual development.
4. Problems of early term infants.
5. Beckwith-Wiedemann syndrome.
6. Relevance of newborn screening in India.
7. Use of Prostaglandin for critical congenital heart disease.
8. Stabilization of a neonate before transport.
9. Oxygen saturation targets in preterm neonates.
10. Subgaleal Haemorrhage.

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Diagnosis and management of shock in newborn – Controversies and consensus.
2. Give a brief account of neonatal pain. How will you reduce pain during neonatal procedures?

II. Write notes on:

(10 x 7 = 70)

1. Caffeine versus aminophylline in apnea of prematurity.
2. Anion gap and Delta anion gap.
3. Congenital versus acquired cytomegalovirus infection in neonates.
4. Problems of late preterm babies.
5. Complications of therapeutic hypothermia.
6. Paracetamol versus ibuprofen in patent ductus arteriosus.
7. Complications of meconium aspiration.
8. High frequency ventilation.
9. INSURE technique of surfactant administration.
10. Diagnosis and management of congenital hypothyroidism.

(LK 083)

FEBRUARY 2017

Sub. Code:1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Challenges in maintaining normal body temperature of ELBW babies in early postnatal life.
2. Pathophysiology and management of the asphyxiated newborn – advances in neuroprotection.

II. Write notes on:

(10 x 7 = 70)

1. Rotavirus infection in early infancy.
2. Significance of nucleated RBCs.
3. Perinatal and neonatal outcome in maternal malaria.
4. Role of furosemide in newborn.
5. Complications of percutaneous central lines.
6. Glucose 6 Phosphate dehydrogenase deficiency in neonatal period.
7. Scrub typhus infection in pregnancy and the neonate.
8. Indices for assessment of pulmonary disease in neonates.
9. Use of high flow nasal cannula in newborn infants.
10. Point of care testing in neonatal practice.

(LL 083)

AUGUST 2017

Sub. Code:1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Aetiology and management of neonatal seizures.
2. Pathophysiology and management of patent ductus arteriosus in preterm infants.

II. Write notes on: **(10 x 7 = 70)**

1. Surfactant replacement therapy.
2. Role of vasopressin in neonatal practice.
3. Stabilisation of newborn babies with ductal dependent cyanotic heart disease.
4. Bedside EEG in the neonatal ICU.
5. Outcome of neonates with meconium aspiration syndrome.
6. Methods of umbilical catheterization.
7. Neonatal intussusceptions.
8. Pulse oximetry in neonatal practice.
9. Role of nitric oxide in preterm babies.
10. Complications of continuous positive airway pressure.

(LM 083)

FEBRUARY 2018

Sub. Code: 1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Risk factors for Kernicterus and strategies to prevent bilirubin induced neurodysfunction.
2. Aetiology, Investigations and management of non-thriving neonate.

II. Write notes on: **(10 x 7 = 70)**

1. Hyperglycemia- evaluation and management.
2. Monitoring anticonvulsant therapy in neonates.
3. Thermal protection of ELBW babies.
4. Clinician performed cranial ultrasound.
5. Congenital heart block- evaluation and management.
6. Complications of total parenteral nutrition.
7. Prevention of anemia in VLBW infants in the NICU.
8. Non -invasive ventilation.
9. Human milk banking.
10. Neonatal autopsy.

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P.Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Discuss an approach to cardiovascular support based on disease pathophysiology to achieve haemodynamic stability in a critically ill neonate.
2. Describe Therapeutic hypothermia for Hypoxic Ischemic Encephalopathic Infants. Discuss its implementational challenges in Low and middle-Income countries.

II. Write notes on: (10 x 7 = 70)

1. Predictors of Bronchopulmonary Dysplasia.
2. Preventive and Management strategies of Intraventricular Haemorrhage in neonates.
3. Approach a neonate with late onset hypocalcaemia.
4. Early aggressive Parenteral Nutrition – Controversies and Challenges.
5. Humidified High Flow Nasal Cannula therapy.
6. Prognostic factors in a neonate with Congenital Diaphragmatic Hernia.
7. Ventilatory strategies in a neonate with air leak.
8. Examination of Eyes in newborns – an insight.
9. Analysing the efficacy of neonatal transport systems.
10. Modalities of Early stimulation therapy in Level III NICU.

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss prevention of health care associated infections in an NICU. Discuss in detail about Antibiotic stewardship.
2. Factors associated with ventilator induced lung injury. Describe lung protective strategies in detail in a ventilated newborn.

II. Write notes on: **(10 x 7 = 70)**

1. Newer anticonvulsants.
2. Short bowel syndrome.
3. Measures to determine oxygenation in a ventilated newborn.
4. Supraventricular tachycardia in fetus and newborn.
5. Mechanism of action of high frequency ventilation.
6. Uses of donor milk and challenges in establishing a donor milk bank.
7. Management of a pregnant woman (and her newborn) whose VDRL at 36 weeks is positive with a titre of 1:16
8. Hemodynamically significant patent ductus arteriosus.
9. Post hemorrhagic hydrocephalus.
10. Collodion baby and harlequin fetus.

(LQ 083)

FEBRUARY 2020

Sub. Code: 1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Discuss in detail the various pulmonary graphics and their utility in gentle ventilation. Compare the various methods and locations of sensors used in generating pulmonary graphics.
2. Screening at birth for inborn errors in India – Status, Challenges and Recommendations.

II. Write notes on: (10 x 7 = 70)

1. Approach to an infant with Hyponatremia dehydration.
2. Evidences on Neonatal Pain management.
3. Stabilisation and transport of ELBW infant delivered by precipitate labour.
4. Pharmacotherapy in Persistent Pulmonary Hypertension.
5. Hammersmith neurological examination.
6. Acute kidney injury in Newborns.
7. Free bilirubin estimation in significant jaundice.
8. Management of stage III necrotising enterocolitis.
9. Peritoneal dialysis in neonates.
10. Principles of Parent education and support in NICU.

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Describe the stabilization and safe transport of a preterm baby from periphery and the challenges in India.
2. How do you plan total parenteral nutrition and monitor a newborn on total parenteral nutrition.

II. Write notes on: (10 x 7 = 70)

1. Surfactant for non RDS respiratory conditions.
2. Describe the pathogenesis and management of viral pneumonia.
3. Evaluation of a newborn with cerebral stroke.
4. Diagnostic approach to anemia and transfusion guidelines in a neonate.
5. Describe thermoneutral zone and the factors affecting thermoneutral zone.
6. What are the causes of hydrocephalus in neonates and management of hydrocephalus in neonates.
7. Diagnosis and management of Extra Uterine Growth Restriction (EUGR) in a neonate.
8. Pathogenesis of perinatal asphyxia and the role of therapeutic hypothermia in its management.
9. Causes of hyperammonemia in neonates and its management. .
10. Non pulmonary causes of respiratory distress in a neonate and their management.

(DM 0821)

AUGUST 2021

Sub. Code: 1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Pathophysiology, classification, prevention and treatment of chronic lung disease.
2. Neonatal thrombosis – pathophysiology, clinical features and management.

II. Write notes on: (10 x 7 = 70)

1. Methods of surfactant administration.
2. Gentle ventilation.
3. Amplitude integrated EEG.
4. MRI changes in hypoxic ischemic encephalopathy.
5. Management of apnoeic episodes in a preterm neonate.
6. Pharmacotherapy of preterm patent ductus arteriosus (PDA).
7. Neonatal hypertension – diagnosis and management.
8. Neonatal chylothorax.
9. Neonatal pain scores.
10. Neonatal cholestasis.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0222]

FEBRUARY 2022

Sub.Code :1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Discuss the principles of fluid and electrolyte management in a sick neonate in NICU and management of severe dehydration in newborn.
2. Discuss the effect of Neonatal Intensive Care Unit environment on the neonate and the concept of developmentally supportive care in the NICU.

II. Write notes on:

(10 x 7 = 70)

1. Management of Antenatally diagnosed Hydronephrosis.
2. Approach to Hyperglycemia in newborn.
3. Describe pain pathways in neonate and management strategies for relief of pain.
4. Discuss the interpretation of various scalars and loops in pulmonary graphic monitoring of the ventilated neonate.
5. Discuss Neonatal transport in resource rich and resource challenged settings.
6. Ventilator associated pneumonia-Risk factors, management and prevention.
7. Diagnostic approach to a hypertensive neonate.
8. Describe the mechanism of bilirubin neurotoxicity, clinical features of kernicterus and its MRI findings.
9. Discuss Congenital Adrenal Hyperplasia, prenatal and post natal management of Congenital Adrenal Hyperplasia.
10. Periventricular leukomalacia.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0822]

AUGUST 2022

Sub. Code :1453

D.M. – NEONATOLOGY

**Paper III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Discuss the differential diagnosis of a well looking neonate with bleeding manifestations. Discuss in detail the clinical features, diagnosis and management of Neonatal alloimmune thrombocytopenia.
2. Discuss the differential diagnosis of diarrhoea in Newborn and write briefly on congenital chloride diarrhoea.

II. Write notes on: (10 x 7 = 70)

1. Meconium peritonitis.
2. Morbidities of infants born to diabetic mother.
3. Late onset Hypocalcaemia, management of hypomagnesemia associated Hypocalcaemia.
4. Newborn screening for congenital hypothyroidism.
5. Management of babies born at threshold of viability.
6. Non-invasive monitoring of babies on invasive ventilation.
7. Continuous Positive Airway pressure – Devices, Indication and its complication.
8. Ventilation strategy for babies with established Broncho pulmonary Dysplasia.
9. Aggressive Posterior Retinopathy of Prematurity.
10. Neonatal Illness severity scores used in predicting neonatal outcomes and their role in neonatal transport.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0823]

AUGUST 2023

Sub. Code :1453

D.M. – NEONATOLOGY

**PAPER III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: (2 x 15 = 30)

1. Describe CPAP and heated humidified high flow nasal cannula therapy in newborn. Discuss recent evidence of using one mode over the other.
2. Describe strategies to prevent Hypothermia during transport of a sick newborn infant from one health facility to another. Discuss Physiological considerations during air transport of a newborn infant with pulmonary air leak syndrome.

II. Write notes on: (10 x 7 = 70)

1. Nitric Oxide in term and preterm babies.
2. Rotavirus Infection in newborn.
3. Caffeine versus Aminophylline in Apnoea of Prematurity.
4. Measures to reduce transmission of Multidrug Resistant Gram Negative Bacteria in Neonatal units.
5. Growth charts in the newborn.
6. Neonatal Tachyarrhythmia –management.
7. Pharmacotherapy of Neonatal Seizures.
8. Volume Guarantee Ventilation.
9. Oxygen Saturation Targets in Preterm Neonates.
10. Acute Kidney Injury in NICU.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0124]

JANUARY 2024

Sub. Code :1453

D.M. – NEONATOLOGY

**PAPER III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. A 32 weeks preterm baby weighing 1.5 kg has been operated for tracheo esophageal fistula on day 1. Describe the plan for Total Parenteral nutrition for this neonate and discuss about how to monitor for its complications.
2. Approach to and management of a Neonate born with Disorder of Sex Differentiation (DSD).

II. Write notes on:

(10 x 7 = 70)

1. Discuss the core components of developmentally supportive care in Neonatal Intensive Care Unit (NICU).
2. Discuss management approach to desaturation in a ventilated neonate.
3. Discuss 'Care bundles' for prevention of Central Line Associated Blood Stream Infection.
4. Describe the pathogenesis and management of viral pneumonia in newborn.
5. Discuss neonatal transport in resource rich and resource challenged settings.
6. Non pharmacological interventions for the management of neonatal pain.
7. Less invasive surfactant administration.
8. Approach to a neonate with Metabolic acidosis.
9. Aetiopathogenesis and management of non immune Hydrops fetalis.
10. Describe the mechanisms of Ventilator induced lung injury and the lung protection strategies.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0824]

AUGUST 2024

Sub. Code :1453

D.M. – NEONATOLOGY

**PAPER III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE
CARE INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Establishment of neonatal transport system at state level.
2. Use of lung ultrasound and pulmonary graphics for diagnosis and management of respiratory disorders in newborn.

II. Write notes on:

(10 x 7 = 70)

1. Management of persistent pulmonary hypertension that is non responsive to inhaled nitric oxide.
2. Write a note on humidification and warning of respiratory distress for babies receiving Respiratory support.
3. Pros and cons of total parenteral nutrition in a sick newborn.
4. Role of amplitude integrated EEG in a neonate undergoing therapeutic hypothermia.
5. Pleural effusion in newborn.
6. Use of NIRS in neonatal ICU.
7. Lung protective strategy for neonatal ventilation.
8. Approach to Neonatal hypertension.
9. Prevention of post-natal growth failure in ELBW babies.
10. Management of a preterm baby after surgical ligation of PDA.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[DM 0225]

FEBRUARY 2025

Sub. Code :1453

D.M. – NEONATOLOGY

**PAPER III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE CARE
INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Neonatal thrombosis – pathophysiology, clinical features and management.
2. Discuss recent advances in diagnosis and management of neonatal shock.

II. Write notes on: **(10 x 7 = 70)**

1. Short bowel syndrome.
2. Exchange transfusion in newborn.
3. Congenital heart block in newborn – clinical features and management.
4. Clinical presentation and management of posterior urethral sepsis.
5. Neonatal chylothorax.
6. Paracetamol versus Ibuprofen in closure of patent ductus arteriosus.
7. Stabilization of a neonate before transport.
8. Use of prostaglandin for critical congenital heart disease.
9. Less invasive surfactant administration.
10. Tele-neonatology.

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[DM 0825]

AUGUST 2025

Sub. Code :1453

D.M. – NEONATOLOGY

**PAPER III – CLINICAL NEONATOLOGY AND NEONATAL INTENSIVE CARE
INCLUDING NEONATAL TRANSPORT**

Q.P. Code: 161453

Time: Three Hours

Maximum: 100 Marks

I. Elaborate on: **(2 x 15 = 30)**

1. Concerns and controversies in diagnosis and management of postnatal growth failure.
2. Use of point of care ultrasound (POCUS) in neonatal intensive care unit.

II. Write notes on: **(10 x 7 = 70)**

1. Prevention of Carbapenem resistant organism spread in neonatal intensive care unit.
2. Precaution during air transport of a ventilated baby.
3. Supportive care during therapeutic hypothermia.
4. Prostaglandin E1 in neonatology: indications, contraindications and precautions.
5. Approach to a desaturating baby on CPAP.
6. Hemodynamic stabilisation of a newborn baby in septic shock.
7. Approach to a neonate with perinatal stroke.
8. Quality indicators of neonatal intensive care unit.
9. Preoperative stabilisation of a baby with congenital diaphragmatic hernia.
10. Fluid and electrolyte management of a neonate with high output ileostomy.
