**AUGUST 2011**

**[KZ 068]** **Sub. Code: 1451**

# DOCTORATE OF MEDICINE (D.M.) DEGREE EXAMINATION
# (SUPER SPECIALITIES)

## BRANCH XI – NEONATOLOGY

## APPLIED BASIC SCIENCES AS APPLIED TO NEONATOLOGY AND PERINOTOLOGY; RESEARCH METHODS

***Q.P. Code: 161451***

**Time : 3 hours (180 Min)** **Maximum : 100 marks**

**Answer ALL questions in the same order.**

| **I. Elaborate on :** | **Pages (Max.)** | **Time (Max.)** | **Marks (Max.)** |
|---|---|---|---|
| 1. Describe the surfactant metabolism and disorders resulting from its metabolism. | 11 | 35 | 15 |
| 2. Discuss various characteristics of a diagnostic test in research methodology. | 11 | 35 | 15 |
| **II. Write notes on :** | | | |
| 1. Write about the bilirubin metabolism and its handicaps in a newborn baby. | 4 | 10 | 7 |
| 2. What are the maternal analgesia & anesthesia influences on the fetus? | 4 | 10 | 7 |
| 3. Write the essential amino acids required for normal development of a preterm infant. | 4 | 10 | 7 |
| 4. What is the mechanism of action and clinical use of Methyl xanthines in a newborn. | 4 | 10 | 7 |
| 5. How Ductus arteriosus is formed and what is its fate after birth? | 4 | 10 | 7 |
| 6. Describe the embryological development of placenta and mention the factors that regulate placental circulation. | 4 | 10 | 7 |
| 7. Describe the development of diaphragm and its disorders. | 4 | 10 | 7 |
| 8. Write anatomical differences between the preterm skin and term skin. | 4 | 10 | 7 |
| 9. What is the physiological basis for the Transient Tachyapnea of the Newborn? | 4 | 10 | 7 |
| 10. How is the amniotic fluid formed and monitored. | 4 | 10 | 7 |

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**AUGUST 2012**

**[LB 081]** **Sub. Code: 1451**

**D.M – NEONATOLOGY**

**Paper – I APPLIED BASIC SCIENCES AS APPLIED TO NEONATOLOGY AND PERINOTOLOGY; RESEARCH METHODS**

***Q.P. Code: 161451***

**Time: 3 hours (180 Min)** **Maximum: 100 marks**

**Answer ALL questions in the same order.**

| **I. Elaborate on:** | **Pages (Max.)** | **Time (Max.)** | **Marks (Max.)** |
|---|---|---|---|
| 1. Describe the development of the brain and the disorders of abnormal development. | 16 | 35 | 15 |
| 2. Elaborate the steps of thyroxine synthesis and conditions causing dyshormonogenesis. | 16 | 35 | 15 |
| **II. Write short notes on:** | | | |
| 1. Pathophysiology of apnea of prematurity. | 4 | 10 | 7 |
| 2. Surfactant synthesis and secretion. | 4 | 10 | 7 |
| 3. Mechanism of action of inhaled nitric oxide. | 4 | 10 | 7 |
| 4. Circulatory adjustments at birth. | 4 | 10 | 7 |
| 5. Management of fetal supra ventricular tachycardia. | 4 | 10 | 7 |
| 6. G6PD deficiency. | 4 | 10 | 7 |
| 7. Micro deletion syndromes. Describe any 1in detail. | 4 | 10 | 7 |
| 8. MRSA. | 4 | 10 | 7 |
| 9. Forest plot. | 4 | 10 | 7 |
| 10. Antifungal prophylaxis in ELBW babies. | 4 | 10 | 7 |

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**LC 081** **FEBRUARY 2013** **Sub: Code:1451**

**D.M –NEONATOLOGY**

**Paper – I APPLIED BASIC SCIENCES AS APPLIED TO NEONATOLOGY AND PERINOTOLOGY:RESEARCH METHODS**

**Q.P. Code : 161451**

**Time : 3 hours** **Maximum : 100 marks**
**(180 Min.)**

**I. Elaborate on:** **(2x15marks=30marks)**

1. Various modes of Echocardiography useful in neonates and discuss the role of functional echocardiography in neonatal intensive care.

2. Assessment of foetal wellbeing during prenatal and natal period? What are its clinical implications?

**II. Write short notes on :** **(10x7 marks=70marks)**

1. Endocrine functions of placenta
2. Auto regulation of cerebral blood flow in a neonate.
3. Influence of Breast feeding on neonatal brain development
4. Pathophysiology of hypoxic ischemic encephalopathy
5. Calculation of sample size in Medical research?
6. Retinal development and discuss the pathophysiology of Retinopathy of prematurity
7. Types of medication error possible in neonatal practice and its prevention.
8. Mechanism of bilirubin toxicity and its long term sequelae
9. Physiology of pain perception in new born and its management
10. Pharmacokinetics of drugs in preterm infants.

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**(LD 081)** **AUGUST 2013** **Sub. Code:1451**

**D.M. – NEONATOLOGY**
**Paper – I APPLIED BASIC SCIENCES AS APPLIED TO NEONATOLOGY AND PERINOTOLOGY; RESEARCH METHODS**
***Q.P.Code: 161451***

**Time: Three Hours** **Maximum: 100 marks**

**I. Elaborate on:** **(2X15=30)**

1. The Approach to a neonate who presents with dehydration.
2. Overview of normal heart development and discuss mal-development leading to congenital cyanotic heart diseases.

**II. Write notes on:** **(10X7=70)**

1. Dynamic compliance of lung and what are factors which influence it?
2. The host defense mechanisms against fungal infections in a neonate.
3. Evidence based medicine? Describe strength and weakness of evidence based medicine.
4. Intrauterine foetal growth restriction. How will you identify foetal growth restriction?
5. Development of skin & discuss the strategies to protect skin injury in very low birth weight infants.
6. Neuropathology of periventricular leukomalacia.
7. Growth factors in breast milk and their influence on the growth of the neonate.
8. Pharmacological role of dobutamine in neonatal shock management.
9. The role of chorionic villous sampling as a diagnostic modality for genetic diagnosis.
10. Calcium homeostasis in a neonate.

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**(LE 081)** **FEBRUARY 2014** **Sub. Code:1451**

**D.M. – NEONATOLOGY**
**Paper – I APPLIED BASIC SCIENCES AS APPLIED TO NEONATOLOGY AND PERINOTOLOGY; RESEARCH METHODS**

***Q.P.Code: 161451***

**Time: Three Hours** **Maximum: 100 marks**

**I. Elaborate on:** **(2X15=30)**

1. Development of heart and congenital heart defects observed in neonates.

2. Physiology of calcium regulation and disorders of metabolism of calcium in a neonate.

**II. Write notes on:** **(10X7=70)**

1. CSF dynamics and analysis.
2. Receiver operating characteristic curve (ROC).
3. Development and maturation of renal function.
4. Oxygen transport in neonates.
5. Pre and probiotics in preterm infants.
6. Drug therapy for perinatal HIV.
7. Prenatal counseling.
8. Steroidogenesis in the fetoplacental unit.
9. Behavioral states as an indicator of neural integrity.
10. Temperature regulation in preterm babies.

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