

**NNF FELLOWSHIP FOR DOCTORS
OCTOBER 2023 EXAMINATION**

THEORY PAPER II

Total Marks: 50

Time: 60 minutes

Each question has one right answer. Please write the alphabet a/ b/ c or d in the answer key against the question number. There is no negative marking.
Each question carries one mark.

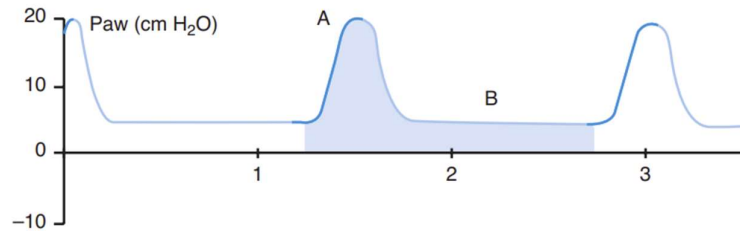
1. 'Quintero staging' is used to quantify the severity of
 - a. Kernicterus
 - b. Twin –twin transfusion
 - c. Hypothyroidism
 - d. Vesicoureteral reflux
2. In Modified New Ballard score, if the final score is 20, it corresponds to how many weeks gestation?
 - a. 28 weeks
 - b. 30 weeks
 - c. 32 weeks
 - d. 34 weeks
3. Content of protein in Human breast milk (100 ml) is
 - a. 1.1 grams
 - b. 2.2 grams
 - c. 3.3 grams
 - d. 4.4 grams
4. Norwood procedure is done in management of which congenital heart disease
 - a. Ventricular septal defect
 - b. Ebstein anomaly
 - c. Truncus arteriosus
 - d. Hypoplastic left heart syndrome
5. Macrocephaly is seen in **ALL EXCEPT**
 - a. Soto's syndrome
 - b. Infant of diabetic mother
 - c. Achondroplasia
 - d. Fragile x syndrome
6. Vitamin K dependent coagulation factors are all of the following **EXCEPT**:
 - a. Factor II
 - b. Factor VII
 - c. Factor VIII
 - d. Factor IX
7. The principal mode of heat transfer to an infant in an incubator is
 - a. Conduction

- b. Convection
 - c. Radiation
 - d. Evaporation
8. Two substances needed for a developing fetus to develop male genitalia are:
- a. Wolffian factor and Mullerian inhibiting factor
 - b. Testosterone and Mullerian inhibiting factor
 - c. Wolffian factor and testosterone
 - d. Mullerian factor and progesterone
9. A 3-week-old neonate presents with an abdominal mass. What is the most likely cause?
- a. Neuroblastoma
 - b. Wilms tumor
 - c. Multi-cystic dysplastic kidney
 - d. Hepatoblastoma
10. Which test is used to differentiate swallowed maternal blood vs infant blood in stool?
- a. Shake test.
 - b. Ferric chloride test
 - c. Apt test
 - d. Osmotic fragility test
11. Which of the statement is **TRUE** regarding hearing loss?
- a. About 10% of cases of congenital hearing loss are genetic in origin
 - b. Most common genetic cause a mutation in connexin 26 gene.
 - c. Maternal medications are the commonest cause of hearing impairment in neonates
 - d. A threshold of ≥ 50 dB is used as cut off for an abnormal screening.
12. Sildenafil – which one is **TRUE**
- a. Has micro-selective action
 - b. Does not affect systemic blood pressure
 - c. Should not be given orally
 - d. Acts through PDE5
13. Packed Red Blood cells transfused to very low birth weight neonates, which one if **TRUE**
- a. Need not be fresh, for top-up transfusions
 - b. Need not be CMV negative for small volume transfusions
 - c. Should be transfused to all babies with Hb < 8 gm / dL
 - d. Are directly and consistently associated with an increase in the risk of NEC
14. Non – invasive respiratory supports – all are **TRUE EXCEPT**
- a. HFNC prongs **MUST** be smaller than 50% of the patient's nostrils
 - b. Nasal injury, gastric distention, hypotension, and pneumothorax are potential complications of nCPAP
 - c. Extubation to NIPPV is associated with a lower need for re-intubation
 - d. In extremely preterm babies (<28 weeks), intubation in labor room is preferred over CPAP / HFNC in view of risk of apnea
15. Applied lung physiology: which one is **TRUE**
- a. The length of the endotracheal (ET) tube must be reduced to reduce airway resistance.
 - b. In RDS, where the lung compliance is high, a long Ti is preferred.
 - c. Volume limit ventilation must not be used in neonates, as technology doesn't allow accurate measurements.

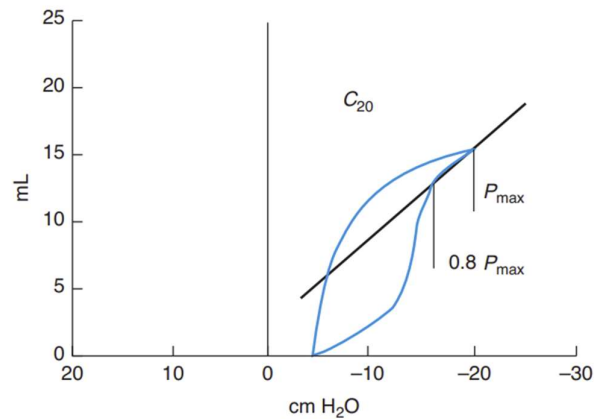
- d. Early caffeine therapy (within three days) is associated with risk of IVH grade 2 or more

16. Facts on regarding evaluation of respiratory health of neonates; which one is **TRUE**

- a. Capillary blood sampling is a poor alternative to arterial blood sampling for assessing the adequacy of ventilation (PaCO₂)
- b. The shaded part of the image depicts peak inspiratory pressure



- c. The image below depicts insufficient PIP



- d. Presence of lung point between abnormal and normal lung is a typical ultrasound lung finding in pneumothorax

17. Prevention of emergencies in babies on respiratory supports; all are **TRUE EXCEPT**

- a. Good respiratory practices include use of a T-piece resuscitator in labour room vs self-inflating bag
- b. Ultrasound confirmation of central line position in inferior vena cava is critical for prevention of tamponade.
- c. There is an association between pulmonary hemorrhage and significant patent ductus arteriosus (PDA)
- d. Preventive strategies for pulmonary hemorrhage include restriction of IV fluids and FFP for all babies < 28 weeks gestation

18. Physiologic differences that have implication in neonatal airway include **ALL EXCEPT:**

- a. The occiput is prominent, the shoulders must be lifted, by placing a shoulder roll
- b. epiglottis of the neonates is longer and narrower, so straight blades are preferred for direct laryngoscopy
- c. 'Jaw should be pushed backwards' this takes the tongue out of the way
- d. Shorter neck poses challenges in tracheostomy

19. Regarding investigating for infections- which one is **TRUE?**

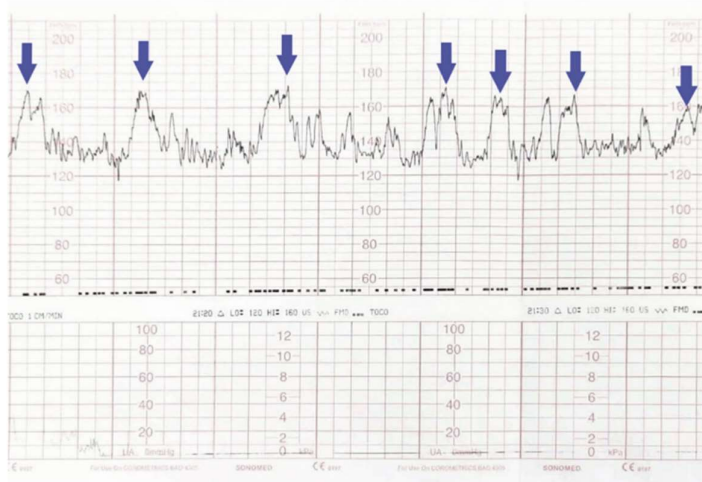
- a. CRP can reliably guide the decision to start antibiotics, and should always be the deciding factor
- b. Beta D Glucan (BDG) is useful in detecting fungal infections.

- c. Polymerase chain reaction (PCR) based tests are not reliable for the detection of viral infections.
 - d. For EONS, it is better to draw blood samples for a complete blood count in the 1st 6 hours after birth
20. Regarding congenital infections, following are **TRUE, EXCEPT**:
- a. Maternal Toxoplasmosis > 18 weeks' gestation: treatment with pyrimethamine, sulfadiazine, and folinic acid is recommended to prevent and treat fetal infection.
 - b. Adequate treatment for syphilis in pregnant women is defined as "completion of a penicillin-based regimen," initiated 30 or more days before delivery.
 - c. Congenital tuberculosis is likely if lesions are noted in the first week of life: primary hepatic complex, or tuberculosis infection of the placenta or maternal genital tract.
 - d. A neonate exposed to active TB in mother or a close contact, must be started on 6 months of Rifampicin prophylaxis.
21. Regarding vaccination of preterm newborns, following are **TRUE EXCEPT**
- a. Preterm babies >30 weeks gestation at birth can be given BCG vaccination within 7 days of birth.
 - b. The zero dose may be given in preterm babies once the baby is stable and outside the nursery
 - c. Hepatitis B vaccine (HBV): The immune response is adequate in preterm, when HBV is administered after 30 days of age, irrespective of birth gestation.
 - d. Penta- Hexa- valent vaccines CANNOT be given to preterm babies at 6 to 8 weeks postnatal age.
22. Following is **TRUE** regarding neonatal thrombotic disorders.
- a. The triad that predisposes to thrombosis is stasis of blood flow, endothelial injury, and hypercoagulability of blood components.
 - b. Renal vein thrombosis is a rare cause of non-catheter-associated thrombosis in neonates.
 - c. Unfractionated heparin (UFH) and low-molecular-weight heparin (LMWH) are NOT recommended for use in neonates
 - d. Protein C, protein S, and antithrombin should be checked before 2 to 3 months after an acute thrombotic episode.
23. Regarding orthopedic disorders in neonates, which one is **TRUE**
- a. Isolated CTEV (not syndromic) has poor outcomes, and termination of pregnancy must be considered.
 - b. Newborns with "unstable hips" in the neonatal period need early follow-up, immediate referral to ortho and ultrasound, within 1- 2 weeks.
 - c. Any baby with joint swelling or restricted mobility must be evaluated for bone and joint infections urgently.
 - d. Most skeletal dysplasia's are diagnosed in early trimester (they should not be missed by early scans).
24. Regarding renal disorders in neonates – which one is **TRUE**
- a. In term babies, Glomerular filtration rate (GFR) rises quickly, doubling by 2 weeks of age and reaching adult levels by 1 year of age.
 - b. Renal tubular disorders always have a genetic basis
 - c. Bag collection of urine is the preferred non-invasive method of urine collection for culture in neonates
 - d. Renal vein thrombosis detected on an ultrasound, must be treated irrespective of size or symptoms.

25. ROP screening and treatment – which one is **FALSE**
- ROP screening is recommended in premature infants ≤ 34 weeks' gestation at birth or weighing $\leq 2,000$ g (RBSK, India).
 - The first screening by an ophthalmologist must be initiated before 30 days of life.
 - Type 2 ROP must be treated.
 - The term A-ROP (aggressive ROP) replaces the older terminology of AP-ROP, to describe aggressive vascular abnormalities not limited to posterior zone 2.
26. Regarding Sacral pits following are not possibly benign and need careful follow up and investigation **EXCEPT**
- placed high, away from coccyx, >2.5 cm from the anal verge
 - with cutaneous markers like tuft of hair
 - with neurologic abnormalities
 - Coccygeal pits
27. Regarding necrotizing enterocolitis, which statement is **FALSE**
- In diagnosis, Ultrasound is faster and limits radiation exposure; but is operator (experience) dependent.
 - Prefeed aspiration and abdominal girth monitoring have serious limitations
 - Spontaneous intestinal perforation (SIP) presents much later than NEC; the preterm babies are more sick, and outcomes are poorer
 - Minimize antibiotic use to reduce selection of microbiota (dysbiosis) and NEC
28. Following are malignancies in neonates with a good prognosis, if treated promptly, **EXCEPT**
- Germ cell tumor
 - Neuroblastoma MS
 - Transient Abnormal Myelopoiesis
 - Acute Myeloid Leukemia
29. Which medication is a Vesicant (Drugs that can result in tissue necrosis or formation of blisters if extravasated)
- Calcium
 - Caffeine
 - Gentamicin
 - All of the above
30. Regarding screening for congenital hypothyroidism (CH), which one is **FALSE**
- Repeat thyroid tests must be performed at 2 weeks for very preterm babies
 - Timely initiation of treatment (within 2 weeks of life) is critical
 - Prevalence of CH in India is 1 in 10,000 live births
 - Exposure to iodine based disinfectants can suppress thyroid function
31. Factors that may increase pulmonary vascular resistance are the following, **EXCEPT**
- Hypercarbia
 - Hypoxia
 - Alkalosis
 - Pain
32. Which one of the following is a **TRUE** statements regarding management of Meconium Aspiration Syndrome
- Routine suction of babies is recommended after the delivery of head
 - Stomach wash prevents severe MAS
 - All babies born through meconium stained liquor must be observed for progressive respiratory distress for 6 hours after birth
 - Bronchoalveolar lavage with dilute surfactant is the most effective therapy

33. Regrading apnea of prematurity, which statement is **FALSE**
- Monitor for an apnea-free period of 5 to 7 days after stopping caffeine (especially in extreme preterm).
 - Early caffeine (<3 days of life) is associated with decrease in bronchopulmonary dysplasia
 - In high doses, caffeine may disturb sleep of the baby
 - Drug levels of caffeine must be monitored once in 2 weeks
34. Factors associated with increase in RDS incidence, **EXCEPT**
- Missed antenatal steroids in preterm
 - Female sex
 - Maternal diabetes
 - Caesarean section, before onset of labor
35. Regarding calcium and phosphorus metabolism in the neonates, which one is **FALSE**
- PTH acts on bone and kidneys
 - Vitamin D is the most important determinant of Phosphorus reabsorptions form kidney in preterm babies
 - If hypocalcemia is not responding to therapy, magnesium deficiency may be considered
 - Parenteral nutrition delivering Calcium alone, without P (>2 days) can lead to hypercalcemia, especially in VLBW infants.
36. Regrading fluid management of extremely low birth weight babies, which statement is **TRUE**
- Use incubator to reduce insensible water loss
 - PDA is associated with excess fluid administration
 - Watch for hyperglycemia
 - All of the above
37. Refractory / persistent hypoglycemia, which statement is **FALSE**
- GIR needs > 10 mg / kg / minute
 - hypoglycaemia requiring IVF > 7 days of life
 - 5 day trail of diazoxide may be required, before concluding on responsiveness
 - Genetic causes are unlikely, unnecessary testing must not be done
38. In management of Neonatal Hyperbilirubinemia, which statement is **FALSE**
- Transcutaneous bilirubin is reliable at levels up to 18 mg / dL and till 2 weeks of life
 - If hyperbilirubinemia persisting for 2 weeks, conjugated bilirubin must be estimated
 - Gestation < 38 weeks is a risk factor
 - rebound is higher in babies who required phototherapy in first 48 hours of life.
39. Regarding cold stress in neonates, which statement is **TRUE**
- The thermal status of neonates expressed as core temperature alone is not enough
 - peripheral vasoconstriction to maintain temperature is referred to as cold stress.
 - Cold stress is associated with inability to gain weight.
 - all of the above
40. in LATCH score which is the **incorrect statement**
- L- LATCH
 - A- always breast feed within 1 hour
 - T- Type of nipple
 - C- comfort
41. Care of normal newborn, which service is **least important**
- Vitamin K
 - Prepare parents for baby care, prior to discharge

- c. Multi-vitamin supplementation
 - d. Documentation of breast feeding success
42. Regrading birth related brachial plexus injury, which statement is **not accurate**
- a. Avoid pulling on the affected limb or lifting the baby with hands under baby's armpits.
 - b. Improvement in the first 2 weeks indicates that near-normal function will return
 - c. Referral to specialist must wait till 6-month age to watch for recovery.
 - d. Shoulder dystocia is a recognized risk factor
43. Regarding the acronym MRSOPA for optimizing ventilation, which **IS INCORRECT**
- a. M—mask adjustment
 - b. R—reassess infant
 - c. S—suction airway
 - d. P—pressure to be increased
44. Regrading hydrops fetalis, which statement is **FALSE**
- a. Hydrops fetalis is excess edema fluid in at least two fetal body compartments.
 - b. The MCA Doppler is highly suggestive of fetal anemia
 - c. Intra-uterine transfusion may be beneficial in severe fetal anemia
 - d. One person experienced in resuscitation may be enough at the time of delivery
45. In managing twin babies. Which statement is **FALSE**
- a. Increased need for personnel for resuscitation
 - b. Examine for anomalies
 - c. Need for extra milk, as breast milk will be insufficient
 - d. Examine for anemia / polycythemia
46. Maternal hypertension, which statement is **FALSE**
- a. May be associated with problems to the baby through out life time
 - b. Baby may have neutropenia
 - c. Baby has higher risk of hypoglycemia
 - d. Mothers medications improve birth weight of the baby
47. Care of Infant of diabetic mother, which statement is **FALSE**
- a. Check birthweight (for macrosomia)
 - b. Examine for any evidence of birth trauma
 - c. Examine for congenital anomalies (especially in babies born to mothers with gestational diabetes).
 - d. Examine for a murmur, feel all pulses and do a pulse oximeter screening.
48. Post term baby, which statement is **FALSE**
- a. pregnancies extend beyond 40 weeks of gestation and are considered post-term.
 - b. Meconium aspiration risk is higher
 - c. Risk of needing resuscitation at birth is higher
 - d. Maternal obesity is a risk factor
49. In the figure, which statement is **TRUE** for a reactive NST
- a. Baseline heart rate is in range
 - b. Good variability of heart rate is noted
 - c. Accelerations are noted, with uterine contractions
 - d. All of the above



50. For documenting your neonatal unit as level III by NNFI; which statement is **INCORRECT**
- Annual admission of at least 300 neonates needing Level III care
 - Follow-up of high risk NICU graduates
 - Every bed should have space of 150 sq foot
 - Its enough that the consultant has a fellowship in neonatology