

**NATIONAL UNIVERSITY OF LESOTHO**  
**FACULTY OF HEALTH SCIENCES**  
**DEPARTMENT OF NURSING**  
**NRS5305: NEONATAL CARE**

**January 2023**

**MARKS: 100**

**TIME: 3 HOURS**

---

**INSTRUCTIONS:**

- 1. Answer all questions**
- 2. Number your answers correctly**
- 3. Do not separate sub-questions of questions**
- 4. Write legibly**

## Question 1

For the following multiple choice questions select the most appropriate e.g. 2. A

1.1 The most correct sequence of early development following fertilization is:

- (a) Zygote, cleavage, morula, blastocyst
- (b) Zygote, cleavage, blastocyst, morula
- (c) Zygote, morula, blastocyst, cleavage
- (d) Zygote, blastocyst, morula, blastomeres

1.2 Which process in the third week of development converts the embryonic disc into the trilaminar embryo?

- (a) Placentation
- (b) Gastrulation
- (c) Neurulation
- (d) Implantation

1.3 The early stages of cleavage are characterized by:

- (a) formation of a hollow ball of cells
- (b) formation of the zona pellucida
- (c) increase in the size of the cells in the zygote
- (d) increase in the number of cells in the zygote

1.4 Fetal growth and development is typically divided into \_\_\_\_\_ periods

- (a) Two
- (b) Three
- (c) Four
- (d) Six

1.5 The inner cell mass of the blastocyst is destined to become the \_\_\_\_\_.

- (a) embryo
- (b) trophoblast
- (c) chorionic villi
- (d) placenta

1.6 During the second week of development, the trophoblast differentiates into:

- (a) Syncytiotrophoblast
- (b) Ectoderm
- (c) Intraembryonic mesoderm
- (d) Blastocyst

1.7 The blastocoele becomes the:

- (a) Amniotic cavity
- (b) Primary yolk sac
- (c) Chorionic cavity
- (d) Mesoderm

1.8 The bilaminar germ disc:

- (a) Consists of epiblast and mesoblast
- (b) Is derived from the outer cells of the morula
- (c) Forms the embryo proper
- (d) Is derived from the entoderm

1.9 The functional components of the placenta are

- (a) The chorion frondosum and the decidua basalis.
- (b) The chorion
- (c) The amnion
- (d) The amniotic fluid

1.10 The seven-day blastocyst:

- (a) Has a single layer of trophoblast at the embryonic pole
- (c) Has an amniotic cavity
- (c) Is attached to the endometrial epithelium
- (d) is embedded in the uterine tubes

1.11 The early stages of cleavage are characterized by:

- (a) Formation of a hollow ball of cells
- (b) Increase in the number of cells in the zygote
- (c) Formation of the zona pellucida
- (d) Fluid formation cells

1.12 The most common site for implantation in ectopic pregnancy is:

- (a) Uterine tube
- (b) Internal os of the uterus
- (c) Ovary
- (d) Abdominal cavity

1.13 During the second week of development, the trophoblast differentiates into:

- (a) Syncytiotrophoblast
- (b) Ectoderm
- (c) Intraembryonic mesoderm
- (d) Blastocyst

1.14 The blastocoele becomes the:

- (a) Amniotic cavity
- (b) Primary yolk sac
- (c) Chorionic cavity
- (d) Mesoderm

1.15 The bilaminar germ disc:

- (a) Consists of epiblast and mesoblast
- (b) Is derived from the outer cells of the morula
- (c) Forms the embryo proper
- (d) Is derived from the entoderm

1.16 The primitive streak is:

- (a) Derived from the outer cells of the morula
- (b) Formed during the second week in development
- (c) The site of involution of epiblast cells to form mesoderm
- (d) Formed during the meiosis

1.17 During development, the notochordal process:

- (a) Arises from involuting endodermal cells
- (b) Extends from the prochordal plate to the primitive node
- (c) Is involved in the induction of the primitive gut
- (d) Is derived from the oral arches

1.18 During what process does the amnion envelop the embryo?

- (a) embryonic folding
- (b) gastrulation
- (c) implantation
- (d) organogenesis

1.19 The ectoderm gives rise to

- (a) CNS
- (b) Heart
- (c) Kidney
- (d) Foregut

1.20 Which of the following is not a derivative of the endodermal layer?

- (a) The foregut
- (b) The hindgut
- (c) The midgut
- (d) Peripheral nervous system

1.21. During fetal life the nervous system is vulnerable to damage by

- (a) Anoxia
- (b) Oxygen
- (c) Carbon monoxide poisoning
- (d) Nicotine

1.22 Which of the following has **no** effect on the initiation of respiration in a neonate?

- (a) Normal handling of the neonate
- (b) Drying of the skin of the neonate
- (c) Slapping the neonate's heel or buttocks
- (d) Cold water

1.23 Which of the following neonates will **most** likely need respiratory support at birth?

- (a) Infant born by normal vaginal birth
- (b) Infant born by caesarean section
- (c) Infant born vaginally after 12 hours of birth

1.24 Which of the following observations is included in the 5 - minutes Apgar score?

- (a) Muscle tone
- (b) Blood pressure

(c) Weight

(d) Height

1.25 Which of the following is **not** correct about relationship of newborn weight to gestational age?

(a) All infants below the weight of 2500g are premature by gestational age

(b) Gestational age is more closely related to fetal maturity than birth weight

(c) Classification of infants by both weight and gestational age is important in predicting mortality risks

(d) Post term infants weighing 5kg

1.26 Which of the following does **not** contribute to newborns loss of 10% of their birth weight by 3 to 4 days of age?

(a) Limited fluid intake in breast-fed infants

(b) Incomplete digestion of complex carbohydrates

(c) Loss of excessive extracellular fluid

(d) Meconium

1.27 Which of the following is true when assessing blood pressure of a newborn?

(a) Blood pressure is affected by gestational age and birth weight

(b) Routine BP measurements of full-term neonates are an excellent predictor of hypertension

(c) A normal BP reading for a 3-day old infant is approximately 90/60

(d) A normal BP reading for a 3-day old is 100/60

1.28 Which of the following is an abnormal finding when assessing the head of the newborn?

(a) Moulding in an infant after vaginal birth

(b) Inability to palpate the sphenoidal and mastoid fontanelles

(c) Posterior fontanelle palpated at about 2.3cm

(d) A pulsating fontanelle

1.29 Which of the following observations from the eye assessment of a newborn is normal?

(a) Presence of strabismus at age 48 hours

(b) Absence of the red reflex at age 24 hours

(c) No pupillary reflex at age 3 weeks

(d) Presence of bleeding in the eye

1.30 Which of the following findings need a midwife to notify a doctor?

(a) The 2 –day- old neonate with periodic breathing

(b) The 24-hour-old neonate with Epstein pearls on the side of the hard palate

(c) The 24-hour-old neonate with nasal flaring

(d) A two-day old neonate with apnoea

1.31 Which of the following is **not** a risk factor in birth injuries during delivery?

(a) Dystocia

(b) Breech presentation

(c) Excess amniotic fluid

(d) Cephalhematoma

1.32 Which of the following birth injuries is **most** likely to need further evaluation?

- (a) Sclera haemorrhage
- (b) Petechiae
- (c) Ecchymosis
- (d) Caput succedaneum

1.33 Nursing care for soft tissue injury is **not** usually directed towards:

- (a) Assessing the injury
- (b) Explaining the need for careful follow up of injury after discharge
- (c) Providing explanations and reassurance to the parents
- (d) Suturing the injury

1.34 Which of the following statements about bilirubin encephalopathy is true?

- (a) Development may be enhanced by metabolic acidosis, lowered albumin levels, intracranial infections and increase in the metabolic demands for oxygen and glucose
- (b) It does not lead to permanent neurologic damage
- (c) It produces permanent liver damage by deposits of conjugated bilirubin within the cell
- (d) It does not produce liver damage

1.35 It is the term used to describe the yellow staining of the brain cells that can result in bilirubin encephalopathy:

- (a) Jaundice
- (b) Physiologic jaundice
- (c) Kernicterus
- (d) Liver damage

1.36 Which of the following statements is true about hypoglycaemia in a newborn?

- (a) Hypoglycemia is present when the newborn's blood glucose is lower than the baby's requirements for cellular energy and metabolism
- (b) In the healthy term infant born without complications, blood glucose is routinely monitored within 24 hours to detect hypoglycemia
- (c) A plasma glucose level of less than 60mg/dl in a term infant requires intervention
- (d) Hypoglycemia is not common in large babies

1.37 What assessment finding is the midwife **most** likely to see in the infant as a result of hypoglycemia?

- (a) Forceful, low pitched cry
- (b) Jitteriness, tremors and twitching
- (c) Vomiting and refusal to eat
- (d) Irritability

1.38 Which one of the following is **not** used as a category in the classification of high-risk newborns?

- (a) Birth size
- (b) Gestational age
- (c) Mortality

(d) Mode of birth

1.39 Which of the following interventions is **least** likely to be effective for high risk neonates?

- (a) Keeping the infant in an incubator or radiant warmer
- (b) Placing the heat sensing probe on the infant's abdomen when the infant is in the prone Position
- (c) Ensuring that the oxygen supplied to the infant is warmed and humidified
- (d) Keeping the infant in Fowlers position

1.40 The best way to prevent infection in the high risk neonate is

- (a) Meticulous and frequent hand washing of all persons coming in contact with the infant
- (b) Observing continually for signs of infection
- (c) Performing epidemiologic studies at least monthly
- (d) Hand washing after using the bathrooms

1.41 In caring for a preterm infant's skin the midwife use

- (a) Scissors to remove dressings or tape from the infant's extremities
- (b) Solvents to remove tape form the skin
- (c) Use zinc oxide- based tape to secure monitoring equipment or IV infusions
- (d) Use extension tape

1.42 KB, a neonate born 20 minutes ago, was observed at birth to have meconium staining. If KB has meconium in the lungs, this **most** likely will

- (a) Prevent air from entering the lungs
- (b) Trap inspired air in the lungs
- (c) Not cause problems with breathing
- (d) Cause nasal flaring

1.43 Which of the following is the best way for the midwife to promote a healthy parent-infant relationship for the family with a high-risk neonate?

- (a) Reinforce parents during their care giving activities and interactions with their infant
- (b) Help parents understand that the preterm infant offers no behavioural rewards
- (c) Reassure the parents that the infant is doing well
- (d) Support the parents emotionally

1.44 Discharge instructions for the preterm infant should **not** include:

- (a) Warning parents that their infant may still be in danger and will need constant attention
- (b) Providing information to the parents on how to contact health providers for later questions
- (c) Providing adequate information about immunizations
- (d) Reassure the parents that the infant will do well

1.45 A physical characteristic usually observed in a preterm infant and not observed in a full term infant is:

- (a) Proportionately equal head in relation to the body
- (b) Skin that is translucent, smooth and shiny
- (c) Absence of lanugo

(d) A big head in relation to the body

1.46 Apnoea in the preterm is defined as a lapse of spontaneous breathing lasting for how many seconds?

- (a) 5
- (b) 10
- (c) 20
- (d) 15

1.47 A late and serious sign of respiratory distress in the neonate is:

- (a) Central cyanosis
- (b) Respiratory rate of 90 breaths / minute
- (c) Nasal flaring
- (d) Blue extremities

1.48 The laboratory evaluation for the diagnosis of sepsis is **least** likely to include which culture:

- (a) Blood
- (b) Gastric secretions
- (c) Urine
- (d) Mucus

1.49 Clinical manifestations of patent ductus arteriosus (PDA) include which of the following?

- (a) Narrow pulse pressure with increased diastolic blood pressure
- (b) Bradycardia
- (c) Systolic or continuous murmur heard as a “machinery- type” sound
- (d) Dyspnoea

1.50 Neonate born to narcotic –addicted mothers may exhibit all of the following clinical manifestations **except**:

- (a) Tremors and restlessness
- (b) Frequent sneezing
- (c) Coordinated sucking and swallow reflex
- (d) Irritability, flaring nostrils

**Mrs Moyo had a normal pregnancy and delivery without complications at 39 weeks gestation. She is breastfeeding her 2-day-old -neonate when she notices that Lyla’s skin is looks yellow. Tests reveal that Lyla’s total bilirubin level is 13 mg/dl.**

**Answer question 1.51 to 1.55**

1.51 Mrs Moyo asks the midwife about Lyla’s condition and seriousness of her illness. Which one of the following is the best response?

- (a) Lyla has pathologic jaundice, a serious condition
- (b) Lyla has breast milk jaundice and will need to stop breastfeeding
- (c) Lyla probably has physiologic jaundice, a normal finding at her age
- (d) Lyla has kernicterus



1.52 Mrs Moyo is encouraged to increase her frequency of breast-feeding to every 2 hours. What is the rationale?

- (a) The jaundice is related to the process of breast feeding, probably from decreased caloric and fluid intake by breast-fed infants
- (b) The jaundice is caused by the mother's haemolytic disease
- (c) The jaundice is increased because the infant was put on breast early, which increases the amount of time meconium is kept in the gut before excretion
- (d) The jaundice is increased by the breastfeeding

1.53 Lyla's serum bilirubin has not decreased as the doctor hoped, and she is put on phototherapy. Which is the priority goal?

- (a) The infant will receive adequate IV fluids
- (b) The infant will have hourly bilirubin testing completed
- (c) The infant will not experience any complications from phototherapy
- (d) Monitoring of vital signs

1.54 When caring for Lyla, which of the following actions should the midwife **not** implement?

- (a) Applying eye shields
- (b) Applying oil daily to skin to avoid breakdown
- (c) Monitoring the temperature closely
- (d) Checking the vital signs

1.55. Which of the following is the **best expected patient outcome** for Lyla while she is on phototherapy?

- (a) Newborn displays no evidence of eye irritation, dehydration, and temperature instability or skin breakdown
- (b) Family demonstrates an understanding of therapy and prognosis
- (c) Newborn displays no evidence of infection
- (d) Newborn has signs of fever

(55)

## Question 2

For the following statements indicate whether **true or false. E.G 1.30 TRUE**

2.1 Factors that predispose the neonate to excessive heat loss are large surface area and thin layer of subcutaneous fat

2.2 Nonshivering thermogenesis is an effective method of heat production in the neonate

2.3 Brown fat or brown adipose tissue has a greater capacity to produce heat than ordinary adipose tissue

2.4 A preterm infant weighs less than 2500g regardless of gestational age

2.5 Infants who are mechanically ventilated and have low Apgar scores can have lower blood pressures

- 2.6 During fetal life lungs are filled with amniotic fluid.
- 2.7 The surfactant is produced at around 24 weeks.
- 2.8 Initial breaths require high inspiratory and expiratory rates
- 2.9 The alveoli should collapse during the initial breathing.
- 2.10 The left ventricle provides 35% of the cardiac output.
- 2.11. The newborn has a very low cardiac output (20ml/kg/minute).
- 2.12 Blood pressure tends to be high immediately after birth and descends to its lowest after about 3 hours of age.
- 2.13 Partially flexed extremities with the legs near the abdomen is the position of the normal newborn
- 2.14 The first cry of the newborn should be lusty, vigorous, and high pitched.
- 2.15 At birth a term newborn has water accounting for around 55% of the total body weight.

(15)

### Question 3

Match the terms in column A with the descriptions in column B.

3.1 Embryo	A. is the mitotic cell division of the zygote where daughter cells are formed
3.2 Conceptus	B. The cell formed by the fusion of an ovum and a sperm
3.3 Primordium	C. The embryo and its membranes
3.4 Cleavage	D. The fused fluid-filled spaces forming a large cavity
3.5 Zygote	E. The formation and closure of the neural tube
3.6 Morula	F. The first indication of an organ or structure
3.7 Blastocyst	G. Formation of the gastrointestinal system
3.8 Omphalocele	H. The derivative of the inner cell mass
3.9 Neurulation	I. Abdominal contents herniate through the umbilical ring
3.10 Endoderm	J. A ball of cells resulting from mitotic cell division of a zygote

(10)

### Question 4

- 4.1 Compare and contrast preterm and postterm infant. (12)
- 4.2 Describe four nursing interventions and their rationals for an infant with respiratory distress. (8)

(20)