



Government of Jammu and Kashmir
Government Medical College, Srinagar



NOTIFICATION

Today on 24th February, 2025, the Govt. Medical College, Srinagar conducted a written examination of the candidates for selection against the tenured position of **Fellowship in Neonatology**. The solved Question Paper of the said examination as per Answer Key framed by the paper-setter has been uploaded on the official website of GMC, Srinagar www.gmcs.ac.in for information of all concerned candidates.

If any candidate feels that the key to any question(s) is/are wrong, he/she can submit objection/representation on the prescribed format annexed as per annexure-A alongwith sufficient documentary proof/evidence and fee of Rs. 300/= per question (refundable in case of genuine/ correct representation) in the Academic Section, Govt. Medical College, Srinagar **by or before 25th February 2025 (Upto 02:00 PM)**.

Challenges made by the candidates will be verified by the subject Expert. If the challenge of any candidate is found correct, the Answer Key will be revised and applied in the response of all the candidates accordingly. The key finalized by the Expert after the challenge will be final and the result will be prepared on the basis of the revised Final Answer Key.

No objection/representation shall be entertained after expiry of the stipulated time frame i.e. after **25.02.2025 (02.00 PM)**

Principal/Dean,
Govt. Medical College, Srinagar.

Dated:24.02.2025.

NO:- Acad/9735-38

Copy for information and n.a to the:-

1. Joint Director Information, Kashmir with the request that this Notice may kindly be got published in the prominent local dailies .
2. HOD Paediatrics, Government Medical College, Srinagar.
3. Chief Accounts Officer, Govt. Medical College, Srinagar for information.
4. I/C Website, GMC, Srinagar with the directions to upload the Notice on the Official website of college.

(Annexure- A)

**Representation regarding objections(s) to any
Question/Answer pertaining to the written tests held on
24-02-2025 for selection of
Fellowship in Neonatology**

=====

Name of the candidate : _____
Roll No. : _____
Session (forenoon/afternoon): _____
Address : _____
Payment details : _____
Candidate's 16 digit A/C No. _____

Question No.	Details of objection	Resource Material (copy to be enclosed)

Signature of the candidate

SOLVED QUESTION PAPER OF WRITTEN EXAMINATION HELD FOR FELLOWSHIP IN NEONATOLOGY

1. A 6 days old is being examined, while checking reflexes, a brisk Moro reflex is noted. Which of the following may be a cause?

- A. Kernicterus
- B. Stage 3 HIE
- C. Hypoglycemia
- D. Erb's Palsy

C

2. A 4 weeks old exclusively breastfed infant came with complaints of persistent jaundice. On evaluation, the baby is icteric up to legs, alert, afebrile, and gaining weight with total serum bilirubin of 12.8 mg/dL (direct-0.6). Most appropriate management for this child

- A. Start phototherapy and stop breastfeeding
- B. Reassure mother and continue breastfeeding
- C. Perform liver function test and ultrasound of abdomen
- D. HIDA scan

B

3. A term newborn with clear airways, correctly positioned, and heart rate (HR) above 100/min is having labored breathing. Next step in management is:

- A. Start positive pressure ventilation
- B. Continuous positive airway pressure (CPAP)
- C. Start chest compression
- D. Deep pharyngeal suction.

B

4. A full term lower segment cesarean section (LSCS) born, previously healthy, 2-week-old female patient was brought to outpatient department with bilateral breast enlargement since birth and a history of some clear, nonbloody, and milk-like discharge from both the nipples. There was no history of maternal infections during the pregnancy. The neonate was afebrile with stable vitals. Bilateral breast examination showed a palpable, nontender mass with mild redness of the overlying skin with no nipple discharge. Sepsis screen was negative. What is the most appropriate next step in management?

- A. Milking of the enlarged breast
- B. Surgical intervention
- C. Hormonal estimation in neonate
- D. Reassure parents and observe.

D

5. Which one of the following is most likely to lead to a decrease in the need for early top-up blood transfusion for extremely preterm infants?

- A. Iron supplementation
- B. Erythropoietin
- C. Vitamin E supplementation
- D. Decreased frequency of blood sampling

A

6. A 25-day term male baby with a birth weight of 3 kg came to the emergency with the mother complaining of vomiting and sudden episodes of bizarre head and neck movements with complete arching of the back lasting for few seconds, mostly during or after feeding, since day 2 of life. His physical, neurological examinations, and electroencephalogram (EEG) were normal.

What is the most probable diagnosis?

- A. Infantile torticollis
- B. Infantile spasm
- C. Sandifer syndrome
- D. Kernicterus

C

7. In case of seizures due to hypoglycemia in a newborn treat with loading dose of the Following

- A. 2 ml/Kg of 50% dextrose
- B. 2 ml/Kg of 10% Dextrose
- C. 5 ml/kg of 10% Dextrose
- D. 5 ml/Kg of 50% dextrose

B

8. A 29 weeks male baby weighing 890 grams was born to a mother with severe Pre Eclampsia. The Doppler was suggestive of Reduced End Diastolic Flow in umbilical artery. On day 9 of life this baby presents with temperature instability, apnoea, abdominal cellulitis, Hypotension and intramural gas in intestinal wall in abdominal x ray. What is the stage of NEC in this baby?

- A. Stage II A
- B. Stage II B
- C. Stage III A
- D. Stage III B

B

9. Primary apnoea is characterized by all except:

- A. Fall in blood pressure
- B. Fall in heart rate
- C. Cessation of respiration
- D. Decrease in neuromuscular tone

A

10. Which of the following symptoms in a newborn infant would prompt you to test for cystic fibrosis?

- A. Pneumonia
- B. Intrauterine growth retardation
- C. Meconium ileus
- D. Wheezing

C

11. The blood bank has received an order for an intrauterine transfusion. A fetus with which of the following would most likely require transfusion prior to birth?

- A. Erythroblastosis fetalis
- B. Sickle cell anemia
- C. Spherocytosis
- D. B Thalassemia

A

12. Which of following is true about fetal circulation?

- A. 100% of the cardiac output goes to the lungs via the pulmonary artery.
- B. The arterial duct (ductus arteriosus) helps send oxygenated blood to the brain.
- C. The umbilical vein carries well-oxygenated blood.
- D. Blood shunts across the duct 'left to right' (from the aorta to the pulmonary artery).

C

13. Which one of the following pregnancies carries the highest risk of adverse outcome?

- A. Singleton pregnancy.
- B. Dichorionic diamniotic (DCDA) twins.
- C. Monochorionic diamniotic (MCDA) twins.
- D. Monochorionic monoamniotic (MCMA) twins.

D

14. With regard to maternal medical disorders, which of the following statements are FALSE?

- A. Mothers with epilepsy should have their medication reviewed prior to planned pregnancy.
- B. Congenital myotonic dystrophy is likely to be more severe in each generation.
- C. Infants of mothers with insulin-dependent diabetes should be put on an insulin infusion soon after birth to avoid neonatal ketoacidosis.
- D. Pre-eclampsia (PET) is more likely to occur if mother has a new partner.

C

15. Which of the following statements is FALSE regarding normal birth?

- A. Most babies are cyanosed at birth.
- B. Fetal blood oxygen levels can be 4–6 kPa (30–45 mmHg) without causing brain damage.
- C. The fetal brain can use alternative fuels such as ketones if the supply of glucose is interrupted.
- D. If cord blood is collected, the umbilical arterial pH will be the same or higher than the umbilical vein pH.

D

16. Which of the following is true of the newborn skin?

- A. Pustular rashes are always abnormal in the first week of life.
- B. Pustular rashes occurring in the first 72 hours of life should always be treated with aciclovir.
- C. Haemangiomas tend to respond well to treatment with propranolol.
- D. Cutis aplasia of the vertex is associated with the use of fetal scalp electrodes.

C

17. With regard to fractures in the newborn period, which of the following statements is true?

- A. Fractures to the long bones are a common finding when there is a history of a difficult delivery.
- B. Skull fractures found immediately after delivery indicate medical negligence has occurred.
- C. Rib fractures are rarely caused by CPR in full-term infants, and the possibility of non-accidental injury should be considered.
- D. Fractures to the clavicle can cause an Erb's palsy.

C

18. What is the name given to the random inactivation of one X chromosome in a female (either maternal X or paternal X) at a stage during cell division? This enables heterozygous females to exhibit some features of an X-linked recessive disease, for example, elevated creatinine phosphokinase in Duchenne muscular dystrophy

- A. Buffalo hypothesis.
- B. Elephant hypothesis.
- C. Lyon hypothesis.
- D. Rhinoceros hypothesis

C

19. Which one of the following statements is FALSE with regard to the composition of human milk versus cows' milk?

- A. Human milk contains more lactoalbumin.
- B. Human milk contains more vitamins A, C and E.
- C. Human milk contains more calcium and phosphate.
- D. Human milk contains more lactoferrin

C

20. A 35-week preterm female infant is now 4 hours old and self-ventilating in air. She was born via emergency LSCS for breech position after preterm labour. Her mother was given 1.2 g IV benzylpenicillin 3 hours before delivery. Apgars were 9 and 9 respectively, birth weight was 2600 g. In the last hour the baby has had four episodes where she stopped breathing for >20 seconds, her heart rate dropping to <80 beats per minute and her oxygen saturations to <70%. She requires firm stimulation by the nursing staff to resolve these episodes. Between episodes her oxygen saturations on pulse oximetry are 96% and her examination is normal. She is not currently on any medications. Which one of the following options is the most appropriate next step in the management of her apnoea?

- A. Place her in 30% oxygen.
- B. Commence caffeine for apnoea of prematurity.
- C. Perform a sepsis work-up and commence IV antibiotics.
- D. Start mask continuous positive airway pressure (CPAP)

C

21. You are asked to review a newborn term male infant because his mother is a hepatitis B carrier. The baby is now 2 hours of age and is attempting a breastfeed with his mother. The mother's serology is as follows: HBSAg positive, HBeAg negative, antiHBeAb positive. Which of the following options is the most appropriate next step in the management of this baby?

- A. Cease the breastfeed immediately and allow only formula feeding.
- B. Arrange for Hep B immunoglobulin to be administered within the next 24 hours.
- C. Arrange Hep B vaccine to be administered within the next 72 hours.
- D. Arrange for both Hep B immunoglobulin and Hep B vaccine to be administered within the next 10 hours

D

22. Regarding preterm delivery at the borderline of viability, which of the following statements is true?

- A. Below 26 weeks' gestation, boys have a better prognosis than girls.
- B. For babies born at 24 weeks' gestation there is a 10–15% chance of survival
- C. Ethically, when it comes to making decisions about whether to offer intensive care to an extreme preterm baby, the views of the parents supersede all other considerations.
- D. There is no evidence to support the use of adrenaline in babies born in very poor condition at <25 weeks.

D

23. What is the name given to the hypothesis that shows a relationship between small birth weight and the subsequent risk of type 2 diabetes, insulin resistance, hypertension, cardiovascular disease and stroke?

- A. Barker hypothesis
- B. Meow hypothesis.
- C. Moo hypothesis
- D. Lyon Hypothesis

A

24. The most important independent predictor of survival in extreme prematurity is which one of the following?

- A. Birth weight
- B. Gestational age
- C. Antenatal administration of steroids to mother
- D. Administration of Magnesium Sulphate

B

25. You come on for night duty and are asked to review the radiograph of a 24-week infant weighing 730 g who has just had a 3.5 Fr umbilical artery catheter (UAC) inserted to 10 cm. On the radiograph you note that the catheter is just left of the midline and the tip is at the level of T12. Which one of the following is the most appropriate next step in management?

- A. Advise the nursing staff that the catheter is in a good position.
- B. Advance the catheter so that it sits above the vertebral level of T10
- C. Withdraw the catheter so that it sits at the vertebral level of L4
- D. Withdraw the catheter so that it sits at the vertebral level of L1

C

26. Congenital absence of which surfactant protein (SP) is most likely to be lethal in the neonatal period?

- A. SP-A
- B. SP-B
- C. SP-C
- D. SP-D

B

27. A 28-week gestation female infant, birthweight 800 g, was intubated at birth for resuscitation and given endotracheal surfactant. She is now 2 hours old and is being ventilated using the assist/control (SIPPV) mode with volume guarantee. The back-up rate is set at 35 breaths per minute, the inspiratory time is 0.35 second, the volume is set at 3.2 ml (4 ml kg^{-1}) and the maximum peak inspiratory pressure is set at 25 cmH_2O . The current peak inspiratory pressure is 16 cmH_2O , the positive end-expiratory pressure (PEEP) is 5 cmH_2O , and the baby is breathing at a rate of 55 breaths per minute. If the infant has a spontaneous pneumothorax, which one of the following is most likely to occur?

- A. Inspiratory time will increase.
- B. Peak inspiratory pressure will increase.
- C. Tidal volume will increase.
- D. PEEP will increase.

B

28. A 26-week gestation male infant, intubated and ventilated since delivery, is 6 hours old and has received two doses of surfactant. His chest radiograph has a ground glass appearance with air bronchograms. The baby is breathing at a rate of 65 breaths per minute. The ventilation settings are as follows: Mode: assist control (SIPPV); Fractional inspired oxygen concentration (FiO_2) 0.3; Peak inspiratory pressure (PIP) 18 cmH_2O ; positive end-expiratory pressure (PEEP) 6 cmH_2O ; rate 40 breaths per minute; inspiratory time (IT) 0.35 second. The arterial blood gas is as follows: pH 7.19 [7.34–7.43]; Paco_2 62 mmHg [31–42]; Pao_2 56 mmHg [45–60]; bicarbonate 19 mmol l^{-1} [20–26]; base excess -4.8 [-5.0–5.0]. Which one of the following alterations to the ventilator settings would be the most appropriate to improve ventilation?

- A. Convert to SIMV.
- B. Increase inspiratory time to 0.6 second.
- C. Increase PEEP to 7 cmH_2O .
- D. Increase PIP to 20 cmH_2O .

D

29. A 29-week gestation infant, intubated since birth for moderate respiratory distress syndrome, has been steadily improving and is now 12 hours old. The baby was given a loading dose of caffeine at 8 hours of age. The baby is vigorous, well perfused and passing urine. Blood pressure is within normal limits. The level of ventilatory support has been progressively weaned and is currently as follows: Mode: synchronized intermittent positive pressure ventilation (SIPPV) (assist control); fractional inspired oxygen concentration (F_{iO_2}) 0.21; peak inspiratory pressure (PIP) 12 cmH_2O ; positive end-expiratory pressure (PEEP) 5 cmH_2O ; set ventilator rate 30 breaths per minute; inspiratory time (IT) 0.35 second; baby's spontaneous breathing rate 50 breaths per minute. The most recent arterial blood gas is as follows: pH 7.43 [7.34–7.43]; P_{aCO_2} 31 mmHg [31–42]; P_{aO_2} 68 mmHg [45–60]; bicarbonate 23 mmol l^{-1} [20–26]; base excess 1.6 [–5.0–5.0]. Which one of the following would be the most appropriate next step?

- A. Extubate to nasal continuous positive airways pressure (CPAP).
- B. Increase PIP to 13 cmH_2O .
- C. Reduce IT to 0.3 second.
- D. Decrease set ventilator rate to 20 breaths per minute.

A

30. A 28-week gestation preterm baby weighing 800 g develops a new murmur on day 5 of life. This is loudest at the left sternal edge but sounds continuous at the left clavicle. Which one of the following is an appropriate further action?

- A. Measure the systolic and diastolic blood pressure (BP).
- B. Measure pre- and postductal saturations as there is likely to be a significant drop between them due to ductal shunting.
- C. Prescribe aspirin 75 mg once daily for 3 days.
- D. Perform an electrocardiogram (ECG).

A

31. You are asked to review a 5-week old, ex 31-week male infant who has started to have increasing frequency of vomiting after feeds. The vomit appears to be undigested milk only and is not green in colour. He is currently having alternate suck and nasogastric feeds with formula, and appears to vomit after both types of feed. On examination he appears well and his abdomen is soft and non-tender. He has a normal urine output and is passing normal stools. Which one of the following is the most appropriate examination to identify a cause of the vomit?

- A. pH probe.
- B. Upper GI contrast study.
- C. Plain abdominal radiograph.
- D. Ultrasonography of the abdomen.

D

32. Which one of the following is the major contributor to the development of physiological jaundice?

- A. Enterohepatic circulation
- B. Decreased hepatic bilirubin excretion.
- C. Immature hepatic enzymes
- D. Increased bilirubin production.

D

33. Phototherapy decreases unconjugated serum bilirubin levels by which one of the following mechanisms?

- A. Isomerization of the bilirubin molecule to lumirubin, which is water-soluble and can then be excreted by the kidneys.
- B. Direct conjugation of the bilirubin molecule which allows it to be excreted by the liver.
- C. Splitting the bilirubin molecule into smaller water-soluble molecules which can then be excreted by the kidney.
- D. Induction of the enzyme glucuronyl transferase in the liver, which increases bilirubin conjugation and liver excretion.

A

34. Which one of the following is the most common cause of late-onset haemorrhagic disease (vitamin K deficiency bleeding)?

- A. Neonatal septicaemia.
- B. Complete oral (instead of IM) vitamin K administration.
- C. Cystic fibrosis.
- D. Hypoxic Ischemic Encephalopathy

C

35. A female infant is born at 39 weeks via elective lower segment caesarean section for breech position. Her birth weight is 3400 g and head circumference is 35 cm. She does not require any resuscitation. This is the first pregnancy of her 24-year-old Caucasian mother. Soon after birth she is noted to have a widespread petechial rash, but is otherwise well. A cranial ultrasound reveals a right-sided grade 1 intraventricular haemorrhage but no other abnormality. A full blood count reveals the following: Hb 14 g dl⁻¹ [135–195]; white cell count 9.8×10^9 l⁻¹ [9.4–34.0]; neutrophils 6.8×10^9 l⁻¹ [5.0–21.0]; platelet count 4×10^9 l⁻¹ [150–400]. Apart from the thrombocytopenia, the film looks otherwise normal. The mother's platelet count was 316×10^9 l⁻¹ [150–400]. Which one of the following is the most likely diagnosis?

- A. Alloimmune thrombocytopenia
- B. Autoimmune thrombocytopenia
- C. Congenital CMV infection
- D. von Willebrand's disease (vWD).

A

36. Which one of the following conditions is LEAST likely to present as hydrops fetalis?

- A. α -Thalassaemia.
- B. β -Thalassaemia.
- C. Rhesus isoimmunization
- D. Twin-twin transfusion syndrome

B

37. Which one of the following diseases is least likely to be included in a newborn screening program?

- A. Hypothyroidism
- B. Trisomy 21
- C. Phenylketonuria
- D. Galactosemia

B

38. You are asked to counsel a woman who is planning to have another baby after her first baby was born with spina bifida. Which one of the following preconception management options is most likely to reduce the risk in any subsequent pregnancy?

- A. Thiamine
- B. Folic Acid
- C. Vitamin B12
- D. Ultrasound screening

B

39. Which one of the following is the most useful tool in the prediction of neurodevelopmental outcome for a baby with moderate encephalopathy secondary to hypoxic–ischaemic encephalopathy (HIE)?

- A. MRI
- B. Bedside amplitude integrated EEG.
- C. Doppler assessment of the cerebral arteries
- D. Neurological examination

A

40. Premature closure of which of the following sutures can cause scaphocephaly?

- A. Metopic suture
- B. Coronal suture
- C. Saggital suture
- D. Lambdoid suture

C

41. Which of the following is not a manifestation of hyperkalemia:

- A. Paresthesias
- B. Paralysis
- C. Wide QRS complex
- D. Tetany

D

42. A child with a history of allergy to yellow jackets is stung and immediately begins experiencing tightness in the chest and wheezing. The drug of first choice for management of this child is:

- A. Inhaled albuterol
- B. Subcutaneous epinephrine
- C. Intramuscular diphenhydramine
- D. Intramuscular epinephrine

D

43. A child experiences ascending paralysis with peripheral neuropathy. The cranial nerves are intact. The cerebrospinal fluid is normal except for an elevated protein level. Which of the following is the likely infectious agent precipitating this syndrome?

- A. Corynebacterium diphtheriae
- B. Clostridium botulinum
- C. Campylobacter jejuni
- D. Clostridium tetani

C

44. A child can copy a circle first at what age?

- A. 2 years
- B. 3 years
- C. 4 years
- D. 5 years

B

45. Which one of the following factors is most likely to lead to inadequate mother-infant bonding?

- A. Elective caesarean section.
- B. Parental decision to formula feed.
- C. Postnatal depression
- D. Failure to attend antenatal classes.

C

46. A 7 day old male infant presents with a seizure. Serum glucose is 17 mg/dL. Examination is normal with exception of jaundice and microphallus. The most likely diagnosis is:

- A. Congenital toxoplasmosis
- B. Congenital hepatitis
- C. Congenital hypopituitarism
- D. Nonketotic hypoglycemia

C

47. You receive an emergency call to the delivery room. On arrival, you find a term male infant, birthweight 2800 g, receiving positive-pressure ventilation via a T-piece in 70% oxygen. The saturations are 90% and the baby is now 10 minutes old. The baby has a cleft lip and palate, microcephaly, small eyes and small ears. You suspect the baby has trisomy 13. There had been no concerns during the pregnancy. Which one of the following is the most appropriate next step in the management of this baby?

- A. Continue full resuscitation, stabilize the baby and admit to the nursery for investigations.
- B. Immediately cease resuscitation attempts and allow baby to die peacefully.
- C. Continue respiratory support but do not intubate the baby, even if indicated.
- D. Tell parents the suspected diagnosis and seek their wishes with regards to ongoing resuscitation.

C

48. A female infant is born at 25 weeks' gestation with a birth weight of 809 g. She is born in good condition and requires no active resuscitation, but develops moderate respiratory distress requiring intubation and surfactant. She is extubated to CPAP the next day. She has some mild feed intolerance and apnoea of prematurity, but otherwise has an uncomplicated neonatal admission. Her cranial ultrasounds are all reported as normal. She never required treatment for retinopathy of prematurity. Which one of the following neurological problems is most likely to be present on long-term follow-up?

- A. Blindness
- B. Spastic diplegia
- C. Hemiplegia
- D. Spastic quadriplegia

B

49. An ex-25-week male infant has had the following ophthalmological findings on a 34-week review: 'Demarcation line zone 3 bilaterally'. The parents have asked you what stage of retinopathy of prematurity (ROP) their son has. Which is the staging that best describes this finding?

- A. Stage 1
- B. Stage 2
- C. stage 3
- D. Stage 4

A

50. Which one of the following is the most common cause of sensorineural deafness in newborn infants?

- A. Prematurity
- B. Autosomal dominant inheritance
- C. Autosomal recessive inheritance
- D. Congenital Rubella Syndrome

C