1. The preferred surgical technique for repair of arteriovenous malformation in neonates is:
   a. direct craniotomy
   b. radio ablation
   c. staged embolization

2. Expectant management of cystic hygroma is preferred for _____ months following delivery.
   a. 12–16
   b. 18–24
   c. 26–36

3. Complications of radiation therapy used to treat cystic hygroma include:
   a. branchial fistula
   b. scoliosis
   c. torticollis

4. Which of the following may result from surgical resection of a cystic hygroma?
   a. Horner syndrome
   b. phrenic nerve paralysis
   c. sensorineural hearing loss

5. Following surgical resection of a cystic hygroma, which type of drainage system is used most often?
   a. Hemaduct
   b. Jackson-Pratt drain
   c. small-bore chest tube

6. Which of the following is required for cryotherapy?
   a. general anesthesia
   b. mild sedation
   c. paralytic agents
7. Following laser photocoagulation for retinopathy of prematurity, patients are treated with:
   a. antibiotics  
   b. sedation 
   c. topical steroids

8. Which nerve is most prone to injury following resection of a first branchial arch cleft?
   a. accessory  
   b. facial 
   c. trigeminal

9. Which of the following is a complication of cleft lip and palate?
   a. facial nerve paralysis 
   b. hearing loss 
   c. swallowing deficits

10. In the infant with Robin sequence, a glossopexy procedure is done to treat:
    a. apnea  
    b. feeding difficulties 
    c. tracheal stenosis

11. What percentage of infants with laryngomalacia requires surgical intervention?
    a. 5–10  
    b. 10–15 
    c. 15–20

12. Infants with congenital lobar emphysema should have which of the following tests to rule out the existence of associated cardiac anomalies?
    a. cranial CT scan  
    b. echocardiogram 
    c. renal ultrasound

13. What type of thoracotomy approach is most commonly used to excise bronchogenic cysts?
    a. left anterolateral 
    b. right midaxillary 
    c. right posterolateral

14. With which of the following is congestive heart failure more commonly found?
    a. bronchogenic cyst 
    b. bronchopulmonary sequestration 
    c. cystic adenomatoid malformation

15. In the presence of scimitar syndrome, the nurse should anticipate the use of which of the following therapies?
    a. extracorporeal membrane oxygenation (ECMO) 
    b. high frequency ventilation 
    c. nitric oxide ventilation

16. Which of the following positions is recommended for infants with congenital diaphragmatic hernia (CDH)?
    a. prone  
    b. side-lying with hernia dependent 
    c. side-lying with hernia superior

17. Following surgical repair of a CDH, the chest tube, if used, should be placed to:
    a. continuous low suction  
    b. intermittent suction 
    c. water-seal drainage

18. Surgical management of diaphragmatic eventration is recommended for infants with:
    a. failure to thrive 
    b. sleep apnea 
    c. heart failure

19. Surgical treatment of chylothorax is recommended when daily drainage exceeds _____ ml/kg.
    a. 5  
    b. 10 
    c. 15

20. A click heard on cardiac auscultation indicates:
    a. shunting 
    b. stenosis of vessels 
    c. valvular involvement

21. In evaluating blood pressure in all four limbs, which of the following findings is significant?
    a. arm pressure 25 mmHg greater than leg pressure 
    b. arm pressure equal to leg pressure 
    c. leg pressure 15 mmHg greater than arm pressure

22. During a hyperoxia test, an infant with cardiac disease would be expected to achieve a maximum PaO₂ of <_____ mmHg.
    a. 100  
    b. 200 
    c. 300

23. What is the recommended initial dose of prostaglandin E₁ in mcg/kg/minute?
    a. 0.05–0.1  
    b. 0.1–0.2 
    c. 0.2–0.4

24. Adverse effects of digoxin include:
    a. decreased urine output 
    b. hypertension 
    c. vomiting

25. Complications of balloon septostomy include:
    a. atrial arrhythmias 
    b. coronary artery occlusion 
    c. pneumothorax

26. Indomethacin as a treatment for patent ductus arteriosus is most effective for the infant _____ weeks of age.
    a. 1–2  
    b. 3–4 
    c. 5–6

27. In preoperative management of tetralogy of Fallot, propranolol may be used to:
    a. decrease right ventricular outflow tract spasm 
    b. elevate systemic blood pressure 
    c. increase venous return to the heart

28. Which of the following procedures comprises part of a Stage I Norwood repair?
    a. Fontan procedure 
    b. ligation of the ductus arteriosus 
    c. patching of the ventricular septal defect
29. Following surgical repair of total anomalous pulmonary venous connection, the nurse should anticipate which of the following potential complications?
   a. diaphragmatic paralysis
   b. right heart failure
   c. systemic hypertension

30. Following cardiac surgery, nitroglycerin may be used to:
   a. enhance pulmonary blood flow
   b. increase cardiac contractility
   c. reduce afterload

31. In assessing an infant with suspected esophageal atresia, the nurse should anticipate:
   a. being unable to advance a catheter through the infant’s nose
   b. having the catheter stop at the posterior nasopharynx
   c. having the catheter meet resistance at 9–13 cm depth

32. In addition to dysfunctional peristalsis, the other most common complication encountered after tracheoesophageal (TE) fistula repair is:
   a. leaking at the anastomosis
   b. recurrence of the fistula
   c. stenosis at the anastomosis site

33. Following an anastomotic repair of a TE fistula, oral feedings are usually withheld for a minimum of _____ days.
   a. 3
   b. 5
   c. 7

34. A pH probe study is considered diagnostic for gastroesophageal reflux if the esophageal pH is less than _____.
   a. 4
   b. 5
   c. 6

35. Which of the following strategies can be used to deal with leakage around a gastrostomy tube?
   a. adding water to slightly overfill the balloon
   b. advancing the tube an additional 1–2 cm
   c. keeping the tube perpendicular to the abdominal wall

36. In caring for a preoperative infant with gastroschisis, the nurse should be aware that the infant’s fluid requirements are:
   a. lower than those of a normal neonate, to avoid bowel edema
   b. two to three times higher than those of a normal neonate
   c. the same as an infant of similar gestational age

37. Following a procedure to return an infant’s bowel to the abdominal cavity, the nurse should anticipate that the infant may have:
   a. diuresis
   b. increased cardiac output
   c. metabolic acidosis

38. Following omphalocele repair, infants often develop:
   a. dysfunctional swallowing
   b. gastroesophageal reflux
   c. oral aversion

39. After repair of a pyloric stenosis, oral feedings are usually restarted at ____ hours of age.
   a. 6–8
   b. 12–18
   c. 24–48

40. Which of the following is considered a surgical emergency?
   a. abdominal distention
   b. bilious vomiting
   c. failure to pass stool by 72 hours of age

41. A procedure often required prior to surgery for Hirschsprung’s disease is:
   a. anal dilation
   b. barium swallow
   c. colonic irrigation

42. In an infant with necrotizing enterocolitis, which of the following is an indication for surgery?
   a. abdominal wall cellulitis
   b. frank blood in the stools
   c. thrombocytopenia

43. Following surgical repair of an anorectal malformation, IV antibiotics are usually given for how many hours?
   a. 24–36
   b. 48–72
   c. 80–120

44. With an adequate sample, the diagnostic accuracy of a liver biopsy is ____ percent.
   a. 85
   b. 90
   c. 95

45. If an infant with biliary atresia has hypoprothrombinemia, the nurse can expect that the infant will need daily administration of:
   a. platelets
   b. fresh frozen plasma
   c. vitamin K

46. Which of the following is given prior to surgery for biliary atresia?
   a. erythromycin
   b. kanamycin
   c. penicillin

47. What percentage of infants undergoing a portoenterostomy will require a liver transplant?
   a. 50–65
   b. 65–80
   c. 80–95

48. Which of the following is a sign of end-stage liver disease?
   a. ascites
   b. esophageal varices
   c. increased PT, PTT
49. Which of the following is the most common complication of a Kasai portoenterostomy?
   a. cholangitis
   b. metabolic dysfunction
   c. pruritus

50. A postoperative portoenterostomy patient has which of the following drugs administered?
   a. ampicillin
   b. methylprednisolone
   c. ursodiol

51. Which of the following complications of portal hypertension occurs in more than 60 percent of long-term survivors?
   a. cholangitis
   b. GI bleeding
   c. liver failure

52. The first step in managing postportoenterostomy ascites is:
   a. drain fluid
   b. diuretics
   c. sodium restriction

53. Discharge teaching for the postportoenterostomy patient includes teaching the parents why there is a need to supplement the infant with which of the following vitamins?
   a. A
   b. B
   c. C
   d. B₁₂

54. In caring for an infant with suspected neuroblastoma, the nurse should anticipate the need to send a urine sample to test for:
   a. catecholamine metabolites
   b. creatinine clearance
   c. quantitative amino acids

55. In infants with neuroblastoma, a poor prognosis is indicated by the presence of an elevated:
   a. calcitonin
   b. ferritin
   c. troponin

56. The prognosis for neuroblastoma is poorer when primary tumors are found in the:
   a. adrenal gland
   b. gonads
   c. kidney

57. Which of the following tests is used to diagnose posterior urethral valves (PUV) in the infant?
   a. CT scan
   b. intravenous pyelography
   c. voiding cystourethrogram

58. In a neonate with PUV, which of the following is recommended to facilitate urinary drainage?
   a. 4.0 French feeding tube
   b. 5.0 French straight catheter
   c. 6.0 French balloon catheter

59. Complications of suprapubic catheters include:
   a. fistula formation
   b. renal stones
   c. urethral stenosis

60. In treating PUV, valve ablation may be deferred in patients with:
   a. bladder dilation
   b. renal pelviectasis
   c. severe respiratory illness

61. In infants with PUV, which of the following is an indication for operative urinary drainage?
   a. marked hydronephrosis
   b. presence of renal calculi
   c. systemic hypertension

62. Which of the following is a preferred method of diagnosing a patent urachus?
   a. CT scan
   b. sinogram
   c. voiding cystourethrogram

63. Which of the following is included in preoperative nursing care of the neonate with a patent urachus?
   a. applying petroleum jelly to the surrounding skin
   b. placing a transparent dressing around the umbilicus
   c. using an ostomy bag to collect urinary drainage

64. Which of the following is recommended to cover an exposed bladder?
   a. mupirocin ointment
   b. normal saline-soaked gauze
   c. plastic wrap

65. Which of the following should be included in the care of the infant with bladder extrophy?
   a. initiating latex precautions
   b. leaving 1–2 cm of umbilical cord below the cord clamp
   c. using gentle pressure to empty the bladder every 1–2 hours

66. Following repair of bladder extrophy, the risk of wound dehiscence is increased in the presence of:
   a. a bladder prolapse
   b. prolonged suprapubic catheter use
   c. suprapubic urinary leakage

67. Following the repair of bladder extrophy, the reappearance of blood in the urine is most likely a sign of:
   a. infection
   b. bladder spasm
   c. stone formation

68. Which of the following is a common complication of surgical reimplantation of the ureters?
   a. failure to thrive
   b. hydronephrosis
   c. obstruction

69. Following surgical repair of a megaureter, feedings are normally resumed when:
   a. bowel function resumes
   b. stents are removed
   c. urinary drainage is clear
70. In neonates having surgery to repair a megaureter, administration of antibiotics continues until:
   a. 14 days after surgery
   b. the urinary catheter is removed
   c. there is no vesicoureteral reflux

71. Which of the following care practices are appropriate for an infant with prune belly syndrome?
   a. administration of antispasmodic drugs
   b. intermittent catheterizations
   c. management of constipation with prune juice

72. Which of the following is true of the tests used to evaluate ureteropelvic junction obstruction?
   a. bilateral disease complicates interpretation of diagnostic tests
   b. MRI is the gold standard test
   c. a radionucleotide study should be done within 72 hours of birth

73. With each tap of a ventricular access device (VAD), _____ ml/kg of cerebrospinal fluid can be removed to decrease intracranial pressure to <3 cm H₂O.
   a. 1–4
   b. 5–10
   c. 11–15

74. The amount of positive pressure usually applied to an external ventricular drainage (EVD) system is _____ cm H₂O.
   a. 2–5
   b. 6–9
   c. 10–13

75. Following insertion of an EVD, at how many weeks does the incidence of infection increase?
   a. 1
   b. 2
   c. 3

76. Which drug is used prophylactically against urinary tract infection in infants with myelomeningocele repair?
   a. amoxicillin
   b. azithromycin
   c. vancomycin

77. An infant with an infected dermal sinus should be monitored for signs of:
   a. meningitis
   b. osteomyelitis
   c. urinary tract infection

78. In evaluating an infant with a suspected encephalocele, the diagnostic test of choice is:
   a. CT scan
   b. MRI
   c. sonogram

79. Which of the following is a complication of a linear skull fracture?
   a. craniotabes
   b. Dandy-Walker malformation
   c. leptomeningeal cyst

80. Risk factors for extra- and intracranial hemorrhage include:
   a. breech delivery
   b. intrauterine growth restriction
   c. occiput posterior delivery

81. What type of surgical procedure is done to treat a posterior fossa hemorrhage?
   a. frontal-parietal flap
   b. suboccipital craniectomy
   c. subdural tap

82. Following surgery for spinal cord injury, hypertension may be an early sign of:
   a. altered renal blood flow
   b. autonomic dysreflexia
   c. elevated intracranial pressure

83. Immediately following surgical repair of an extremity defect, circulation should be assessed every _____ minutes.
   a. 5–10
   b. 10–15
   c. 15–20

84. In repairing an amniotic constriction band, a W-plasty technique is used in order to:
   a. allow for scar expansion
   b. minimize circulatory disruption
   c. reduce visible scarring

85. Which of the following principles guides decisions regarding the timing of amniotic band repair?
   a. bone repairs should be done first
   b. repairs involving the hand must be done before six months of age
   c. soft tissue procedures can be done early

86. When a radial deformity is complicated by a fixed elbow, the first treatment option is:
   a. amputation
   b. nonintervention
   c. serial casting

87. In an infant with an absent radius, surgery is an option when:
   a. deficiencies involve only the soft tissue
   b. sufficient support for the hand is lacking
   c. the hand and fingers are otherwise normal

88. In the first month following casting for treatment of clubfeet, the casts are changed:
   a. every week
   b. every two weeks
   c. every month

89. With the Ponseti casting technique, how many long leg casts are usually required?
   a. 1–3
   b. 4–7
   c. 8–10

90. In treating clubfeet with the Ponseti casting technique, the equinus deformity is treated:
   a. first
   b. midway through the series of casts
   c. last
91. In treating clubfeet, the Denis Browne bar is used to promote:
   a. abduction of the foot
   b. lateral rotation of the talus
   c. pronation of the ankle

92. Failure of the Ponseti casting technique is usually caused by:
   a. abnormal shape of the tarsal bones
   b. shortening of the Achilles tendon
   c. failure to comply with use of the orthosis

93. Which of the following demonstrates a subluxable hip?
   a. Barlow maneuver
   b. Galeazzi sign
   c. Ortolani maneuver

94. What is the failure rate percentage of the Pavlik harness as a treatment for developmental dysplasia of the hip?
   a. 0–5
   b. 5–10
   c. 10–15

95. Which of the following initial management strategies is recommended for the newborn with a brachial plexus injury?
   a. gentle range of motion
   b. rest of the affected arm
   c. wrist strengthening exercises

**ANSWER FORM:**

**Neonatal Surgical Procedures:**

**A Guide for Care and Management—Course 2**

Please completely fill in the circle of the one best answer using a dark pen.

Complete name/address information on the next page.

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Thank you for taking the time to assist us in evaluating the effectiveness of this course. Using the scale below, darken the circles corresponding to your responses. If an item is not applicable, leave it blank.

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**Objectives:**
I am able to:

1. List possible complications of a balloon septostomy.  
2. Describe indications for surgical intervention for the infant with necrotizing enterocolitis.
3. Discuss the pathophysiology of classic bladder extrophy.
4. List risk factors for extra- or intracranial hemorrhage.
5. Discuss management of developmental dysplasia of the hip.

**Presentation**

1. The material presented is relevant to my practice.
2. The questions on the test reflected the content of the book.
3. The book content was comprehensive.
4. The test directions were clear.
5. I perceive the education level of this course to be:
   1 = Basic; 2 = Intermediate; 3 = Advanced

6. How long did it take you to complete the course? ___ hours ___ minutes

7. In what level unit do you practice? I__ II__ III__

I am a □ staff nurse □ NNP □ nurse manager ____________________ other (please state)

What subjects would you like to see offered for CE courses?

Additional comments: _____________________________________________

_________________________________________________________________

Iowa participants may submit the evaluation directly to the Iowa Board of Nursing, 400-SW 8th St., Ste. B, Des Moines, IA 50309-4685.