**Examination Review for Ultrasound**

**Exam:** ARDMS OB Exam

**Anatomy and physiology**

1) During the follicular phase of the ovarian cycle, what hormone is produced by the anterior pituitary gland?
   - a. Estrogen
   - b. Follicle stimulating hormone
   - c. Progesterone
   - d. Luteinizing hormone

2) Within the fetal heart, one should recognize what structure located between the right ventricle and right atrium?
   - a. Bicuspid valve
   - b. Tricuspid valve
   - c. Foramen ovale
   - d. Ductus venosus

**Protocols**

3) The measurement that is performed from the lateral wall of the orbit to the medial wall of the same orbit is the:
   - a. Binocular diameter
   - b. Interocular diameter
   - c. Intraocular diameter
   - d. Ocular diameter

**Pathology**

4) A sonographic examination of a 34-week gestation fetus reveals the loss of normal hypoechoic interface between the placenta and myometrium. The placenta appears to have penetrated beyond the uterine wall and into the bladder as well. Which of the following describes this situation?
   - a. Abruptio placenta
   - b. Placenta percreta
Pathology

5) The sonographic findings of a 30-week gestation includes anophthalmia and a medium cleft lip. These findings would most likely be associated with which of the following?
   a. Holoprosencephaly
   b. Hydrocephalus
   c. Lissencephaly
   d. Hydranencephaly

Protocols

6) A second trimester fetal sonogram is ordered secondary to increased fundal height. Polyhydramnios is identified and the femoral length that falls in the 5th percentile. Which of the following measurements would not be helpful?
   a. Head:abdomen ratio
   b. Renal length
   c. Fibula length
   d. Humerus length

Integration of data

7) An elevated maternal serum alpha-fetoprotein level is associated with all of the following except:
   a. Multiple gestations
   b. Spina bifida aperta
   c. Spina bifida occulta
   d. Gastroschisis

Anatomy and physiology

8) A dumbbell-shaped structure located inferior and posterior to the cerebrum is the:
   a. Fourth ventricle
   b. Cisterna magna
   c. Third ventricle
   d. Cerebellum
Anatomy and physiology

9) Each fetal vertebra consists of:
   a. One neural process and two articular processes
   b. One centrum and two neural processes
   c. One centrum and three vertebral bodies
   d. Two neural process and two central processes

Pathology

10) This image of the fetal cranium reveals:
    a. Strawberry shaped skull
    b. Lemon shaped skull
    c. Osteogenesis imperfecta
    d. Cloverleaf shaped skull

Pathology

11) The sonographic findings in this image are most consistent with the diagnosis of which of the following?
    a. Arnold-Chiarri II malformation
    b. Cystic hygroma
    c. Choroid plexus cyst
    d. Posterior encephalocele

Anatomy and physiology

12) Which of the following could not result from monzygotic twinning?
    a. dichorionic diamniotic
    b. monochorionic diamniotic
    c. monochorionic monoamniotic
    d. dichorionic monoamniotic

Protocols

13) A cephalic index of less than 75 denotes:
    a. Dolichocephaly
    b. Mesocephaly
    c. Scaphocephaly
    d. Brachycephaly
Pathology

14) All of the following are associated with spina bifida except:
   a. Sacral dimple
   b. Meningocele
   c. Absent cerebellar vermis
   d. Curved cerebellum

Pathology

15) Which of the following masses may also be referred to as a "chocolate cyst"?
   a. Leiomyoma
   b. Endometrioma
   c. Cystic teratoma
   d. Adenomyoma

Protocols

16) Which of the following statements concerning this image is not true?

   a. The appropriate measurement is performed in the transverse plane to the fetus, with the fetus in a neutral position.
   b. There is an abnormal fluid collection posterior to the fetal neck.
   c. These findings are worrisome for chromosomal abnormalities.
   d. The appropriate measurement is typically obtained between 11 and 14 weeks gestation.

Pathology

17) Which of the following would not be considered a neural tube defect?
   a. Spina bifida
   b. Cleft lip
   c. Anencephaly
d. Encephalocele

**Anatomy and physiology**

18) The arrowheads in this image are strongly suggestive of:
   a. Diamnions
   b. Dichorionicity
   c. Monochorionicity
   d. Monoamnions

**Anatomy and physiology**

19) Which of the following would best describe the cloaca?
   a. The cloaca is an abnormal tunnel-shaped collecting system in the central portion of the kidney that obstructs the flow of urine from the kidney to the ureter.
   b. The cloaca is the embryonic structure that develops into the rectum and urogenital sinus.
   c. The cloaca is a congenital abnormality in which the distal ureter projects into the urinary bladder.
   d. The cloaca is the embryonic congenital absence of the urethra

**Pathology**

20) Which of the following would be most likely associated with thanatophoric dysplasia?
   a. Occipital bone bossing
   b. Oligohydramnios
   c. Telephone-receiver shaped chest
   d. Good outcome

**Protocols**

21) What projection of the fetal spine is this image depicting?
   a. Coronal
   b. Longitudinal
   c. Axial
   d. Transverse
Pathology

22) This coronal image is indicative of:
   a. Hypertelorism
   b. Cyclopia
   c. Gastrochisis
   d. Cleft lip

Pathology

23) Which of the following bests describes the appearance of a Grade II placenta?
   a. Moderate indentations in the chorionic plate with "comma-like" calcification in the placental substance
   b. Uninterrupted chorionic plate and homogenous placental substance
   c. Prominent indentation in the chorionic plate that extends to the basal layer with diffuse echogenic and anechoic areas noted within the placental substance
   d. Subtle indentations on the chorionic plate, with some small calcifications within the placental substance

Protocols

24) The measurement being obtained in this image is the:
   a. Binocular diameter
   b. Ocular diameter
   c. Intraocular diameter
   d. Interocular diameter

Pathology

25) Which of the following would be most likely associated with the sonographic findings seen in this image?
   a. Pentalogy of Cantrell
   b. Anophthalmia
   c. Trisomy 18
   d. Trisomy 13
Integration of data

26) Which of the following would be the most common cause of an abnormal maternal serum screening?
   a. Maternal weight
   b. Incorrect dating
   c. Edward syndrome
   d. Down syndrome

Anatomy and physiology

27) All of the following are true concerning physiologic bowel herniation except:
   a. It is migration of the midgut into the base of the umbilical cord.
   b. It begins around 8 weeks.
   c. It typically resolves by 12 weeks.
   d. It consistently results in an omphalocele.

Anatomy and physiology

28) Dizygotic twinning always results in:
   a. Conjoined twinning
   b. Monochorionic monoamniotic twins
   c. Dichorionic diamniotic twins
   d. Monochorionic diamniotic twins

Anatomy and physiology

29) A patient presents to the ultrasound department for a first trimester screening examination. Within the fetal cranium, an echogenic linear structure is visualized within the fetal brain separating the two cerebral hemispheres. This structure is referred to as the:
   a. Corpus callosum
   b. Cerebellar vermis
   c. Cavum septum pellucidum
   d. Falx cerebri
Protocols

30) A Spanish speaking patient presents to the ultrasound department. You are unable to communicate with your patient effectively. What should you do?
   a. Get an interpreter.
   b. Perform the examination.
   c. Use sign symbols to communicate.
   d. Use note cards that you made from an online site.

Anatomy and physiology

31) A cell that has 69 chromosomes would be considered:
   a. Triploidy
   b. Haploid
   c. Trisomy
   d. Diploid

Integration of data

32) Which of the following would be most likely seen in a patient with a human chorionic gonadotropin level of 100,000 mIU/mL?
   a. Cystic teratoma
   b. Fibroma
   c. Granulosa Cell Tumor
   d. Theca Lutein cysts

Pathology

33) Which of the following statement concerning the decidualized endometrium is false?
   a. The decidual reaction is a result of the continued production of progesterone by the corpus luteum.
   b. The decidual reaction will appear similar to the early proliferative endometrium.
   c. The decidual reaction is evidence of a pregnancy.
   d. The decidualized endometrium will appear thick and echogenic.
Pathology

34) Upon ultrasound interrogation of the gravid uterus, you discover a fetal cranium obviously filled with anechoic fluid. You suspect hydranencephaly versus severe hydrocephalus. Which of the following would not be sonographic features of hydranencephaly?
   a. Absence of the falx cerebri
   b. Presence of the basal ganglia
   c. Presence of a thin rim of cerebral cortex
   d. Presence of the brainstem

35) Which of the following would best demonstrate a two-vessel umbilical cord?
   a. Oblique color flow image of the umbilical cord
   b. Transverse umbilical cord using pulsed Doppler
   c. Longitudinal umbilical cord at the level of the insertion site into the placenta
   d. Transverse umbilical cord

Anatomy and physiology

36) The arrow in this image is indicating the:
   a. Temporal horn of the lateral ventricle
   b. Third ventricle
   c. Frontal horn of the lateral ventricle
   d. Occipital horn of the lateral ventricle

Protocols

37) The depth of the cisterna magna should not measure greater than:
   a. 8 mm
   b. 2 mm
   c. 10 mm
   d. 3 mm
Pathology

38) What abnormality is noted in this image?
   a. Ventriculomegaly
   b. Cephalocele
   c. Hydranencephaly
   d. Choroid plexus cyst

Anatomy and physiology

39) The sonographic findings of a 27-week fetal examination include evidence of a trident hand. Which of the following best describes the appearance of a trident hand?
   a. Decreased space between the thumb and first finger
   b. Increases space between the first finger and second finger
   c. Decreased space between the first finger and second finger
   d. Increased space between the third finger and fourth finger

Protocols

40) The arrows in this image are indicating the:
   a. Cavum septum pellucidum
   b. Cisterna magna
   c. Cerebellum
   d. Lateral ventricle

Protocols

41) A patient at 33 weeks gestation becomes pale and sweaty during the course of a prolonged obstetric sonogram. The patient is in the supine position. What should you do?
   a. Turn the patient on her side
   b. Ask the patient if she would like to discontinue the examination
   c. Call a physician
   d. Place the patient in a semi-Fowlers position
Pathology

42) This diagram is demonstrating common features of:

- Brain Anomalies
- Hydrocephalus
- Small, low-set ears
- Facial Abnormalities
- Cardiac Defects
- Syndactyly
- Renal Anomalies
- Renal hypoplasia
- IUGR, Small Abdomen
- Single Umbilical Artery

a. Trisomy 18
b. Trisomy 21
c. Trisomy 13
d. Triploidy

Protocols

43) These two images are used for what reason?

- To demonstrate transposition of the great vessels
- To demonstrate the presence of a diaphragmatic hernia
- To demonstrate the presence of evenstrated of the diaphragm
- To demonstrate correct situs
Protocols
44) Patient preparation for a transabdominal pelvic sonogram includes:
   a. No preparation needed
   b. An empty bladder
   c. Drinking water before the examination
   d. Laxatives the night before the examination

Pathology
45) This diagram is demonstrating common features of:
   a. Triploidy
   b. Turner syndrome
   c. Trisomy 18
   d. Trisomy 21

![Diagram showing common features of various genetic conditions]

Pathology
46) Which of the following would be most likely associated with Trisomy 18?
   a. Patau syndrome
   b. Achondroplasia
   c. Heterozygous achondrogenesis
   d. Rockerbottom feet

Integration of data
47) A 37-year-old patient presents to the ultrasound department with a history of elevated maternal serum alpha-fetoprotein. The sonographic findings include a single live intrauterine pregnancy. An analysis of the fetal head reveals bulging eyes and absence of the cranial vault. These findings are most consistent with the diagnosis of:
   a. Hydranencephaly
   b. Anencephaly
   c. Encephalocele
   d. Semilobar Holoprosencephaly
Pathology

48) This transverse transabdominal image of the gravid pelvis reveals an adnexal mass. The patient presented to the emergency room with a history of vaginal bleeding, hypertension, and excessive vomiting. Her human chorionic gonadotropin was markedly elevated. Within the uterus, a large complex mass with cystic components was identified. What is the most likely diagnosis?
   a. Cystic teratoma
   b. Corpus luteum cyst
   c. Theca lutein cyst
   d. Corpus albicans cyst

Pathology

49) Which of the following would most likely be associated with a partial molar pregnancy, elevated human chorionic gonadotropin level, and bilateral ovarian theca lutein cysts?
   a. Hurschsprungs disease
   b. Meckel-Gruber syndrome
   c. Down syndrome
   d. Triploidy

Pathology

50) A 31-year-old patient presents to the ultrasound department with a history of an adnexal mass discovered on a CT examination of the pelvis. Sonographically, only the anterior element of the mass is seen, while the greater part of the mass is obscured by shadowing. What are these sonographic findings indicative of?
   a. Dermoid stromal sign
   b. Dermoid mesh sign
   c. Meig's sign
   d. Tip of the iceberg sign

Pathology

51) Which of the following includes ectopic cordis as a characteristic finding of the condition?
   a. Tetrology of Fallot
   b. Pentology of Cantrell
   c. Meckel-Gruber syndrome
d. Ebstein anomaly

Protocols
52) A biophysical profile examination is performed at 32 weeks. Fetal breathing is seen, but there is no fetal movement. The amniotic fluid is 10cm. A non-stress test is not performed. What is the biophysical profile score?
   a. 4 
   b. 6 
   c. 2 
   d. 5 

Anatomy and physiology
53) Which of the following would be defined as a structural abnormality that results from unusual development?
   a. Trisomy 
   b. Anomaly 
   c. Syndrome 
   d. Malformation 

Anatomy and physiology
54) A patient with a positive pregnancy test is referred to the ultrasound department with a history of painless vaginal bleeding. Sonographically, you visualize a single live intrauterine gestation. The crown rump length is consistent with an 8 week pregnancy. Within the fetal skull, you visualize a round, anechoic structure. What does this most likely represent?
   a. Mega cisterna magna 
   b. Cystic hygroma 
   c. Rhombencephalon 
   d. Thickened nuchal translucency 

Pathology
55) The arrow in this image is indicating the:
   a. Third ventricle 
   b. Cerebellar vermis 
   c. Cavum septum pellucidum
Protocols

56) All of the following can be noted at the correct level of the head circumference except:
   a. Cerebellar vermis
   b. Thalamus
   c. Cavum septum pellucidum
   d. Third ventricle

Physics and instrumentation

57) Abnormal flow patterns within the uterine artery during pregnancy may indicate an increased risk for which of the following?
   a. Chromosomal abnormalities
   b. Fetal shunting
   c. Intrauterine growth restriction
   d. Heart defects

Pathology

58) A 29-year-old patient presents to the ultrasound department with a history of first trimester vaginal bleeding. Which of the following would be least likely to increase the likelihood of this patient having an ectopic pregnancy?
   a. A history of a blighted ovum
   b. The current use of assisted reproductive therapy
   c. A history of pelvic inflammatory disease
   d. The current use of an intrauterine contraceptive device

Pathology

59) A deviation of a finger, as seen in the absence of the middle fifth phalanx, is termed:
   a. Clinodactyly
   b. Trident hand
   c. Syndactyly
   d. Polydactyly
Protocols

60) An abnormal head:abdomen ratio may be caused by all of the following except:
   a. Microcephaly
   b. Gastrochisis
   c. Symmetrical intrauterine growth restriction
   d. Omphalocele

Anatomy and physiology

61) The arrowheads in this image are indicating the:
   a. Cavum septum pellucidum
   b. Corpus callosum
   c. Third ventricle
   d. Cisterna magna

Protocols

62) The measurement being obtained in this image is the:
   a. Interolcular diameter
   b. Ocular diameter
   c. Binocular diameter
   d. Intraocular diameter

Protocols

63) A patient presents to the ultrasound department for an endovaginal sonogram. She is complaining of vaginal bleeding. Which of the following statements is not true of endovaginal imaging?
   a. Endovaginal imaging is contraindicated in the bleeding patient.
   b. Endovaginal imaging provided superb imaging of the endometrium.
   c. Endovaginal imaging provided improved resolution of the
uterus compared to transabdominal imaging.

d. Endovaginal imaging is contraindicated in the patient with an intact hymen.

Protocols

64) Upon ultrasound interrogation of the neck of a 19-week fetus, you discover that the nuchal thickness measure 4mm in the anteroposterior dimension. Which of the following should be considered?

   a. Down syndrome
   b. This is a normal measurement.
   c. Patau syndrome
   d. Edward syndrome

Anatomy and physiology

65) The physiologic cyst that forms after ovulation has occurred is termed the:

   a. Corpus luteum
   b. Dermoid cyst
   c. Theca luteum
   d. Cystadenoma

Pathology

66) Demise of a twin in the second trimester with maceration is termed:

   a. Acardiac twin
   b. Vanishing twin
   c. Fetus papyraceous
   d. Conjoined twinning

Anatomy and physiology

67) A patient presents to the ultrasound department with a positive pregnancy test and left lower quadrant pain. Sonographically, a single live intrauterine pregnancy is identified. The crown rump length yields a 6 week gestation. A structure is identified that appears to be connecting the developing embryo to the secondary yolk sac. What is this structure called?

   a. Omphalomesenteric duct
   b. Gastroepipoic duct
Pathology

68) Which of the following would be the most likely cause of oligohydramnios discovered at 11 weeks?
   a. Severe hydronephrosis
   b. Bilateral renal agenesis
   c. Intrauterine growth restriction
   d. Premature rupture of membranes

Pathology

69) What is this image of fetal genitalia demonstrating?
   a. Normal male genitalia
   b. Clitoromegaly
   c. Fetal hydroceles
   d. Normal female genitalia

Pathology

70) A 25-year-old gravid woman presents to the ultrasound department for a follow-up sonographic examination. In the prior report, you find that the fetus suffers from rhizomelia of the lower extremities. Rhizomelia relates to the:
   a. Absence of distal segment of a limb
   b. Shortening of the proximal segment of a limb
   c. Nonexistence of the proximal segment of a limb
   d. Bowing of the long bones

71) Which of the following could possibly be diagnosed at the end of the first trimester?
   a. Pulmonary hypoplasia
   b. Agenesis of the corpus callosum
   c. Anencephaly
   d. Ventricular septal defect
Protocols

72) Which of the following is the most accurate estimating of gestational age during the first trimester?
   a. Mean sac diameter
   b. Yolk sac diameter
   c. Crown rump length
   d. Biparietal diameter

Protocols

73) Which of the following scan planes would be best for demonstrating a unilateral cleft lip?
   a. Coronal
   b. Oblique
   c. Transverse
   d. Sagittal

Anatomy and physiology

74) Trophoblastic cells produce:
   a. Progesterone
   b. Alpha-fetoprotein
   c. Estrogen
   d. Human chorionic gonadotropin

Anatomy and physiology

75) Which of the following statements best describes the chorion frondosum?
   a. It is the endometrial tissue at the implantation site.
   b. It is the decidualized tissue at the implantation site containing the chorionic villi.
   c. It is the portion of the decidua opposite the uterine cavity, across from the decidua basalis.
   d. It is the maternal contribution of the placenta.

Integration of data

76) Which of the following is a vitamin that has been shown to significantly reduce the likelihood of neural tube defect?
   a. Vitamin C
b. Riboflavin  
c. Folate  
d. Rhogam  

Protocols  
77) Which of the following would be considered to be the least accurate measurement in the estimation of gestational in the presence of dolichocephaly?  
   a. Cephalic index  
b. Transcerebellar diameter  
c. Head circumference  
d. Biparietal diameter  

Pathology  
78) This diagram is demonstrating common features of:  
   a. Triploidy  
b. Trisomy 21  
c. Trisomy 18  
d. Trisomy 13  

Pathology  
79) Upon sonographic examination of a 30-week fetus, you discover evidence of fetal long bone fractures. Based on the sonographic findings, which of the following is most likely?  
   a. Ebstein's anomaly  
b. Phocomelia  
c. Osteogenesis imperfecta  
d. Achondroplasia
Pathology

80) The abnormality noted in this image is indicative of:

![HEART Image]

a. Cystic adenomatoid malformation
b. Rhabdomyoma
c. Ventricular septal defect
d. Pulmonary sequestration

Protocols

81) A follow-up sonographic examination of a 27-week gestation is highly suspicious for intrauterine growth restriction. Which measurement is the best predictor of intrauterine growth restriction?

a. Head circumference
b. Femur length
c. Abdominal circumference
d. Crown rump length

Pathology

82) Which of the following would be considered a benign and a common finding within the male fetal scrotum?

a. Testicle enlargement
b. Hydrocele
c. Testicular torsion
d. Varicocele
Integration of data

83) Which of the following cranial abnormalities would be most likely associated with an elevation in maternal serum alpha-fetoprotein?
   a. Holoprosencephaly
   b. Arnold-Chiari II malformation
   c. Dandy-Walker malformation
   d. Lissencephaly

Integration of data

84) Which of the following maternal laboratory values would be elevated in the presence of Trisomy 18?
   a. All laboratory findings are decreased with Trisomy 18
   b. Human chorionic gonadotropin
   c. Alpha-fetoprotein
   d. Estriol

Pathology

85) The term "thanatophoric" means:
   a. Death bearing
   b. Redundant
   c. Hyperplastic
   d. Hypoplastic

Integration of data

86) This 32-year-old patient presented to the emergency room with a history of a positive pregnancy test and light vaginal spotting. Her laboratory findings included a human chorionic gonadotropin level of 850 mIU/mL. There was no sonographically identifiable intrauterine gestational sac, nor evidence of any adnexal masses. The findings of this sagittal transvaginal image are most consistent with:
   a. Decidual reaction
   b. Double sac sign
   c. Ectopic pregnancy
   d. Intradecidual sign
Anatomy and physiology

87) Which of the following structures would not be identified at the correct level of the abdominal circumference?
   a. Umbilical artery
   b. Stomach
   c. Spine
   d. Aorta

Pathology

88) The arrows in this image are indicating:
   a. Kyphosis
   b. Hemivertebrae
   c. Scoliosis
   d. Anencephaly

Pathology

89) Which of the following would the least common fetal sonographic findings associated with Trisomy 21?
   a. Clinodactyly
   b. Duodenal atresia
   c. Pyelectasis
   d. Cyclopia

Anatomy and physiology

90) Webbed toes is an example of:
   a. Syndactyly
   b. Mesodactyly
   c. Phocomelia
   d. Polydactyly

Protocols

91) The measurement being obtained in this image is the:
   a. Ocular diameter
   b. Binocular diameter
   c. Intraocular diameter
   d. Interocular diameter
Pathology

92) What abnormality results from the failure of the optic vesicle to form?
   a. Hypertelorism
   b. Anophthalmia
   c. Epignathus
   d. Holoprosenephaly

Anatomy and physiology

93) Which of following statements is true concerning the umbilical arteries?
   a. They bring oxygenated blood to the fetus from the placenta.
   b. They return deoxygenated blood from the fetus back to the placenta.
   c. They bring oxygenated blood from the placenta to the fetus.
   d. They enter the umbilicus and proceed cephalad to connect to the paired hepatic arteries.

Pathology

94) Among the list below, which gastrointestinal abnormality is often discovered in the fetus with Down syndrome?
   a. Choledochal cyst
   b. Duodenal atresia
   c. Hirschsprung's disease
   d. Gastroschisis

Protocols

95) A 32-week gestation fetus appears to have unilateral hydronephrosis. What measurement could be obtained to confirm the presence of this abnormality?
   a. Renal diameter between 2 and 6 mm
   b. Renal length between 10 and 12 mm
   c. Renal diameter of greater than 10 mm
   d. Renal length between 4 and 10 mm
Pathology

96) Which of the following would be defined as herniation of the membranes into the cervix?
   a. Funneling
   b. Thinning
   c. Parting
   d. Quickening

97) Facial anomalies, when discovered, should prompt the sonographer to analyze the brain closely for signs of:
   a. Holoprosencephaly
   b. Dandy–Walker malformation
   c. Schizencephaly
   d. Hydranencephaly

98) The most common location of a cystic hygroma is within the:
   a. Axilla
   b. Neck
   c. Chest
   d. Groin

99) All of the following are signs of Arnold–Chiari II syndrome except:
   a. S-shaped spine
   b. Banana sign
   c. Lemon sign
   d. Colpocephaly

100) Sirenomelia is commonly referred to as:
    a. Radial ray defect
    b. Rhizomelia
    c. Mermaid syndrome
    d. Rockerbottom feet