1. Fetal lung maturity can be assessed from amniotic fluid because the surfactant is primarily composed of:
   a. protein
   b. cholesterol
   c. glycerol
   d. triglycerides
   e. phosphatidylcholine and other phospholipids

Use the following key for questions 2 and 3

a. creatinine
b. nile blue sulfate staining cells
c. absorbancy at 450 nm
d. functional test, such as the fluorescence polarization assay
e. “shake test”

2. In diabetic pregnancies, large-for-gestational-age fetuses are not uncommon. Which amniotic fluid test would most accurately predict fetal pulmonary maturity at 38 weeks’ gestation?

3. Which rapid amniotic fluid test would most accurately predict fetal pulmonary maturity at 38 weeks’ gestation?

4. Fetal hemolytic disorders (Rh problems) are best diagnosed by the following test of amniotic fluid:
   a. estriol
   b. phospholipids
   c. bilirubin
   d. surface tension
   e. human chorionic gonadotropin

5. Which of the following tests is useful to predict anencephaly or meningomyelocele?:
   a. serum human placental lactogen
   b. amniotic fluid surface tension
   c. amniotic fluid cortisol levels
   d. amniotic fluid alpha-fetoprotein
   e. amniotic fluid

6. A sample is received for fetal maturity studies, but the laboratory is not sure if the sample is a proper amniotic fluid specimen; that is one not heavily contaminated with maternal urine. Which of the following analytes can be used to differentiate between urine and amniotic fluids:
   a. creatinine
   b. protein
   c. sodium
   d. bilirubin
   e. alpha-fetoprotein

7. Which of the following sets of results from amniotic fluid is likely to be associated with fetal immaturity?
   a. L/S = 2.9, PG = negative
b. L/S = 1.8, PG = positive
c. L/S = 1.5, PG = negative
d. L/S = 2.1, PG = positive
e. L/S = 2.0, PG = negative
8. The best screening test for neural tube defects is measurement of serum:
   a. placental lactogen
   b. bilirubin
   c. estriol
   d. alpha-fetoprotein
   e. chronic gonadotrophin
9. The primary pathway for removal of amniotic fluid during the third trimester of pregnancy is fetal swallowing.
   a. True
   b. False

At what time period do the following biochemical pathways mature or reach maximal levels? Match the time in column A with the pathway in Column B.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. 8-9 weeks gestation</td>
<td>a. fetal hemoglobin production</td>
</tr>
<tr>
<td>11. Parturition at birth</td>
<td>b. adult hemoglobin production</td>
</tr>
<tr>
<td>12. 4 weeks post-partum</td>
<td>c. high levels of lung surfactant</td>
</tr>
<tr>
<td>13. 38 weeks gestation</td>
<td>d. maternal serum chorionic gonadotropin levels</td>
</tr>
<tr>
<td>14. 16 weeks gestation</td>
<td>e. maternal plasma unconjugated estriol production</td>
</tr>
</tbody>
</table>

Question 15 - 21

a. 1, 2, and 3 are correct
b. 1 and 3 are correct
c. 2 and 4 are correct
d. only 4 is correct
e. all are correct
15. Amniocentesis is performed for which of the following conditions?:
   1. management of Rh incompatibility
   2. identification of fetal maturity
   3. identification of potential genetic disorders
   4. identification of fetal sex
16. The primary source(s) of amniotic fluid in the third trimester of pregnancy is (are):
1. skin
2. lung
3. intestine
4. kidney

17. Serial measurements of maternal serum estriol demonstrate a pattern of slightly decreasing levels of estriol. The most likely clinical condition(s) associated with this pattern is (are):
   1. fetal growth retardation
   2. imminent fetal birth
   3. fetal death
   4. toxemia of pregnancy

18. Preeclampsia is associated with which of the following clinical symptom(s):
   1. hypertension
   2. edema
   3. proteinuria
   4. glucosuria

19. The beta chain of human chorionic gonadotrophin (hCG) is closely related to the beta chains of which of the following proteins?
   1. follicle-stimulating hormone (FSH)
   2. thyroid stimulating hormone (TSH)
   3. lututrinizing hormone (LH)
   4. all of the above
   5. none of the above

20. Premature labor:
   1. Can be prevented by treatment with high-dose MgSO4.
   2. Is a leading cause of perinatal death.
   3. Can be caused by infections and maternal drug use.
   4. A cause of toxemia of pregnancy

21. Premature labor can be detected by:
   1. Leaking amniotic fluid
   2. Maternal AFP levels
   3. Fetal fibronectin
   4. Low maternal unconjugated estriol levels

Answer:
1. e (p. 762)
2. d (p. 772)
3. e (p. 772)
4. c (p. 773)
5. d (p. 768, 775)
6. a (p. 772)
7. c (p. 771-772)
8. d (p. 768)
9. a (p. 755-756)
10. d (p. 758)
11. e (p. 759)
12. b (p. 765)
13. c (p. 763)
14. a (p. 765)
15. a (p. 769)
16. c (p. 756)
17. b (p. 757-759, 770)
18. a (p. 766)
19. e (p. 757)
20. a (p. 766)
21. b (p. 766)