Advanced Fetal Monitoring Course

Test A

Name: ______________________________________________  Date: ___________________

Directions:

1. **Case Studies:** The test is based on three patient case studies. Each case study has several questions related to the designated tracings. Carefully refer to the appropriate case information and the corresponding tracing when answering the questions. Although the tracings show only nine minutes of data, consider what you see as representative of the maternal-fetal status. All tracing speeds are 3 cm/minute and the monitoring instrumentation is noted on the tracings.

2. **Scoring:** There are 50 multiple-choice questions worth 2 points each for a total of 100 points. A passing score is 80% or 40/50 correct.

3. You have approximately one hour for the test.

4. Read the cases and the questions carefully. Choose the one **best** answer.

2014 AWHONN Online Advanced Course Test A
Case Study A: Lee Ann

Lee Ann, a 28 year-old G1P0000 at 37 1/7 weeks by sonogram, and her husband arrived on the labor unit at 0730 for a scheduled induction for IUGR.

Lee Ann’s mother has Type II diabetes; otherwise her family history is negative. She has a negative medical and surgical history. Lee Ann’s Quad Screen results were abnormal however she refused amniocentesis. She developed gestational diabetes with this pregnancy but her other prenatal labs were all WNL. During serial US exams for IUGR, a single umbilical artery was noted. On her most recent BPP, the AFI was 11cm and the EFW was 2524 grams (7th percentile). Lee Ann has been performing daily fetal movement counting at home.

1. Which is a correct description of daily fetal movement counting?
   A. counting should not be started by low-risk mothers until 38 weeks of gestation
   B. fetal movement counting is not reliable because the methods of counting vary
   C. the mother counts the number of movements over a specified length of time

2. The BPP includes the assessment of FHR along with what other 4 components?
   A. amniotic fluid, fetal breathing, fetal movement and fetal tone
   B. amniotic fluid, fetal anomalies, fetal breathing and fetal movement
   C. estimated fetal weight, fetal breathing, fetal movement, and placental grading

3. Which of Lee Ann’s findings indicates a potential for chronic fetal hypoxemia?
   A. decreased amniotic fluid volume
   B. increased amniotic fluid volume
   C. intrauterine growth restriction

4. With the finding of a single umbilical artery, what would you expect to observe with Doppler flow studies?
   A. decreased blood perfusion from the fetus to the placenta
   B. decreased blood perfusion from the placenta to the fetus
   C. homeostatic dilation of the umbilical artery
Tracing A-1, 0730 (See II-01 tracing)
U/S,
TOCO

Refer to tracing A-1

Lee Ann’s admission vital signs were BP 109/60, pulse 83, respirations 18, temperature 97°F (36.6°C). Vaginal examination findings were 2-3 cm dilated, 50% effaced, -1 station, membranes intact and cephalic presentation. An ultrasound and tocodynamometer were placed. She denied having contractions or vaginal leaking or bleeding. Following this admission tracing, oxytocin was started at 2 mu/min. Within an hour, the rate was increased to 5mu/min.

5. Primary benefits associated with the use of standardized terminology for fetal heart monitoring interpretation in the clinical setting include:
   A. enhanced communication among health care providers and promotion of patient safety
   B. increased nursing time at the bedside and enhanced patient satisfaction
   C. increased likelihood of correctly diagnosing fetal acidosis during labor

6. Which is a correct assessment of the admission tracing?
   A. baseline FHR of 120 bpm
   B. moderate variability
   C. periodic accelerations

7. Based on this tracing, a necessary intervention would be to:
   A. palpate for fetal movement
B. readjust the ultrasound because the signal is interrupted
C. recheck the maternal temperature
Refer to Tracing A-2
Oxytocin was infusing at 5 mu/min when the attending physician arrived and ordered the oxytocin increased to 8 mu/min.

8. A correct interpretation of this tracing is:
   A. an oxygenated, neurologically intact fetus
   B. early signs of variable decelerations
   C. pending hypotension from oxytocin

9. A high priority intervention at this time is:
   A. administer a fluid bolus
   B. readjust the toco
   C. reposition the mother

10. One hour later, the nurse observed a small amount of thick dark blood clots on the underpad. Lee Ann denied any pain and the abdomen was soft to palpation. Which component of oxygen transport to the fetus could potentially be compromised by this bleeding?
   A. affinity
   B. saturation
C. delivery
Refer to Tracing A-3
Lee Ann’s vital signs were BP 123/70, pulse 86, respirations 18. The oxytocin was infusing at 11mu/hour, and VE findings were 3-4 cm, 80% effaced, -2 station, membranes intact and vertex presentation, with a moderate amount of blood on vaginal exam.

11. The correct assessment of this tracing includes:
   A. marked variability
   B. sinusoidal baseline
   C. uterine tachysystole

12. Which of the following is an appropriate physiologic goal based on Tracing A-3?
   A. maximize umbilical circulation
   B. maximize utero-placental circulation
   C. reduce uterine activity
Refer to Tracing A-4
At the time of Tracing 4, the resident performed AROM and fluid was clear. A vaginal exam indicated the cervix was unchanged. The resident placed a fetal spiral electrode and had difficulty placing an IUPC. The oxytocin was turned off and an IV fluid bolus was administered. The nurse applied O2 at 10 L/minute per snug, non-rebreather face mask and telephoned the attending physician.

13. What FHR characteristics should the nurse report to the attending physician?
   A. recurrent accelerations
   B. recurrent decelerations
   C. marked variability

14. The correct physiologic interpretation of this tracing is:
   A. fetal myocardial acidosis is occurring
   B. fetal hypoxemia may be present
   C. the fetus has oxygen reserves
Refer to Tracing A-5
At 1332 the resident successfully placed the IUPC and an amnioinfusion was initiated at 1340. The resident telephoned the attending physician to report the amnioinfusion had begun.

15. Which intrinsic homeostatic response is the fetus demonstrating?
   A. baroreceptor
   B. catecholamine
   C. sympathetic

16. An amnioinfusion is intended to relieve which extrinsic factor that compromises oxygen transport?
   A. excessive uterine compression
   B. structural abnormalities of the placenta
   C. umbilical cord compression
Refer to Tracing A-6
At 1410 the nurse again telephoned the attending physician to report Lee Ann’s status and asked the physician to come in. The attending physician reported to be “on the way to the hospital” and ordered an emergency cesarean to be started by the senior resident. Lee Ann was prepped for cesarean surgery.

17. Which is an accurate assessment of the FHR?
   A. absent variability
   B. bradycardia
   C. wandering baseline

18. The nurse wants to document her telephone report to the attending physician. Given the emergent nature of this situation, the best approach to documentation would be to:
   A. continue providing care for Lee Ann and write a late entry summarizing the conversation after the cesarean is completed
   B. enter an objective transcription of the conversation in the electronic record while colleagues are preparing Lee Ann for surgery
   C. report the conversation to the charge nurse who can make an entry in the medical record

19. What additional action should the nurse take to minimize risk, based on this case scenario?
   A. double document all FHR assessments
   B. ensure that the neonatal team is notified of the circumstances and are present for the birth
   C. record the attending physician’s lack of response to the telephone reports
The physician delivered a male infant by cesarean birth at 1447 and noted bloody amniotic fluid at delivery. Apgar scores were 3/3/3 at 1/5/10 minutes. The infant was visibly pale. Inspection of the placenta revealed a velamentous insertion of the umbilical cord and a ruptured fetal vessel. The umbilical cord blood gases were: pH 6.88, PCO2 114 mmHg, PO2 10 mmHg, and bicarbonate 15, base excess (−) 20mEq/L. The initial neonatal hematocrit was 20% and the hemoglobin was 8.

20. Which interpretation of these umbilical cord and initial neonatal blood results is correct?
   A. base buffers have been used to maintain oxygenation
   B. the mother was probably hypoglycemic
   C. the neonate is anemic

21. These umbilical cord blood gases indicate:
   A. asphyxia related to umbilical and placental abnormalities
   B. hypoxia related to neurologic damage
   C. mixed acidosis (respiratory & metabolic)

22. Which phrase best describes acidemia?
   A. a decrease of oxygen concentration in the blood
   B. an increase of hydrogen ions in the blood
   C. an increase of hydrogen ions in the tissues
Case Study B: Renee

Renee, a 24-year-old G3 P020 at 41 3/7 weeks gestation arrived on the labor unit with her husband in the evening for induction for post-dates.

Previous to this pregnancy, Renee had an exploratory laparotomy to remove scar tissue on her left ovary and intestines and has had infrequent menstrual cycles, with a menses about every six months. She has had two spontaneous abortions, one at 12 weeks and one at 5 weeks. Her prenatal labs were WNL. Her thyroid was enlarged however her TSH, T4, and T3 done at 39 weeks were all WNL. Renee has a family history of hypertension. A prenatal ultrasound (US) at 19 weeks revealed a low-lying placenta that resolved by 37 5/7 weeks. Today in the fetal assessment unit, an US revealed an EFW of 3300 grams and an AFI of 3 cm. Renee also had a reactive NST and an equivocal CST (OCT).

Renee’s admission vital signs were WNL. Vaginal examination findings were finger tip dilation, 40% effaced, -2 station, membranes intact and cephalic presentation. Renee denied feeling any regular uterine cramping. An ultrasound and tocodynamometer were placed for fetal heart rate, showing characteristics of a Category I tracing. A vaginal prostaglandin insert was placed. Renee and her husband slept through the night.

23. Which compromise in fetal oxygenation could be a result of a post-date pregnancy?
   A. increased saturation capacity
   B. increased fetal oxygen affinity
   C. decreased placental perfusion

24. What are the possible implications of an AFI of 3 cm for labor?
   A. an amnioinfusion will be needed
   B. increased risk of uterine hyperstimulation
   C. potential umbilical cord compression

25. Although Renee’s CST was equivocal, what would be the characteristics of a negative CST?
   A. absence of late decelerations
   B. presence of one late deceleration
   C. reactive FHR tracing

26. What nursing intervention would be most prudent to promote patient safety based on Renee’s gestational age and risk factors?
   A. adequate administration of medications for relief of pain
   B. continuous EFM monitoring through the night
   C. intermittent monitoring until uterine contractions begin
The prostaglandin was removed at 0600 and Renee was up to the bathroom and took a shower. She was then started on oxytocin 2μg/min. From 0730 to 0900 the FHR BL was 165 bpm, moderate variability, occasional periodic variable decelerations and UC every 2-5 minutes lasting 30-60 seconds, mild to moderate by palpation. Renee was coping well and reported her pain as a 2 on a scale of 1-10 during contractions.

**Tracing B-1, 0930 (See ATA-Dys-01 tracing)**

FSE, IUPC

![FHR Tracing](image)

**Refer to Tracing B-1**

Renee’s vaginal exam findings were 2 cm dilation, 80% effaced, and -2 station and vital signs were BP 108/67, pulse 119, respirations 16, and temperature 98.2°F(36.8°C). Oxytocin was infusing at 10 μg/min. At 0925 Renee’s provider performed AROM with resulting thick particulate yellow-green meconium. An FSE and IUPC were placed.

27. Which FHR tracing features must be assessed to distinguish arrhythmias from artifact?

A. shape and regularity of the spikes
B. spikes and variability
C. spikes and baseline

28. In Renee’s tracing, what do the FHR spikes likely represent?

A. bradycardic FHR
B. extra cardiac contractions and longer pauses between cardiac contractions
C. marked variability
29. Which is a correct interpretation of Renee’s tracing?
   A. tachycardia and possible arrhythmia
   B. tachycardia, marked variability, and possible arrhythmia
   C. tachycardia, possible arrhythmia, and occasional late decelerations

30. What initial intervention would be appropriate for Renee?
   A. auscultate the FHR by listening fetoscope or Doppler
   B. reassess maternal temperature and hydration
   C. replace the FSE

31. How could a fetal arrhythmia affect fetal oxygenation?
   A. by increasing fetal oxygen affinity
   B. by increasing sympathetic response
   C. by reducing fetal perfusion

32. Which medication is used to treat fetal arrhythmias?
   A. digoxin
   B. labetelol
   C. nifedipine

33. Fetal hydrops may present on ultrasound as fetal scalp edema and increased abdominal fluid as a result of:
   A. an increase in gestational age
   B. congestive heart failure
   C. sustained oligohydramnios
Refer to Tracing B-2
At 1030, oxytocin was infusing at 13 μg/min and vaginal exam findings were 2-3 cm, 90% effaced, -2 station. Renee’s vital signs were BP 100/66, pulse 122, respirations 18 and temperature 101.2°F (38.4°C). Renee was unable to urinate and a urinary catheter was placed and returned 350 ml clear amber urine.

34. What could increase oxygen consumption in Renee’s fetus?
   A. hyperthermia
   B. umbilical cord compression
   C. uterine tachysystole

35. Which statement describes appropriate uterine contraction assessment and intervention for Renee?
   A. adequacy of uterine resting tone measured by IUPC should be validated by palpation
   B. oxytocin should be increased because some contractions are only 45 mm Hg
   C. uterine contractions are occurring every 1 to 1½ minutes, oxytocin should be decreased
Refer to Tracing B-3
At 1050, the vaginal exam findings are unchanged, oxytocin is now infusing at 16 µu/min. Vital signs are BP 121/72, pulse 118, respirations 20, temperature 102°F (38.9°C). Renee is now complaining of feeling “achy” and states her “stomach is sore” from the oxytocin. The FHR was auscultated at 130 bpm and to be decreasing during the period the tracing was interrupted.

36. What kind of deceleration pattern is occurring in Renee’s tracing?
   A. bradycardia
   B. late decelerations
   C. prolonged deceleration

37. What is the correct interpretation of fetal well-being from this tracing?
   A. the FHR characteristics demonstrate oxygen reserves
   B. the FHR characteristics are Category II
   C. the FHR characteristics are Category I

38. Which assessment or intervention would be least appropriate at this time?
   A. change maternal position to right lateral
   B. further assess fetal oxygenation with scalp stimulation
   C. perform a vaginal exam to assess fetal descent
Refer to Tracing B-4

Renee’s vaginal exam findings are now 2 cm dilation, 90% effaced, and -1 to -2 station. Intravenous antibiotics were initiated. Renee is complaining of nausea and increased abdominal pain.

39. Which medication would be contra indicated for Renee at this time?
   A. acetaminophen
   B. bicitra
   C. terbutaline

40. Which of the following would be the most appropriate care as Renee is prepared for a cesarean delivery?
   A. auscultate for a FHR arrhythmia, replace the FSE, and recheck Renee’s temperature
   B. discontinue EFM and antibiotics and transport Renee to the operating room
   C. discontinue the oxytocin, transport Renee to the operating room and assess FHR before the abdominal prep

41. What pieces of information would be of highest priority to report to the neonatal team as they prepare for the delivery?
   A. FHR tracing, meconium and length of labor
   B. gestational age, meconium, and arrhythmia
   C. gravidity & parity, gestational age, maternal temperature
A female was delivered by cesarean at 1121 and thick meconium was suctioned from below the vocal cords. Apgar scores were 4/5/7 at 1/5/10 minutes and arterial umbilical cord gas pH 7.26, pCO2 56.5, pO2 23, BE –1.9. The newborn had a normal sinus rhythm, normal ECG and echocardiogram and was discharged home with mother.

42. What is the most plausible explanation for the neonate’s normal sinus rhythm at birth?

A. the FSE was apparently detecting the maternal heart rate and not fetal
B. the original tracing characteristics were truly artifact
C. the source of the ectopic fetal cardiac stimulation has resolved
Case Study C: Nikura

Nikura, a 23 year-old G3 P0020 at 25 6/7 weeks, comes to clinic today with complaints of “backache and cramping.”

Nikura is a thin young woman and her prenatal record indicates she was born prematurely. She has had two elective pregnancy terminations and multiple urine and vaginal infections, including treatment for dysplasia with a LEEP procedure. She began prenatal care at 16 weeks and met two prenatal visits. Following a swab for fetal fibronectin, vaginal examination findings in the clinic were 2cm dilation, 70% effaced, -3 station, cephalic presentation. A discharge is present in the vagina and cervix that tests pH 6.0 and negative ferning. Abdominal ultrasound AFI is adequate. Nikura denies recent sexual intercourse. Vaginal microscopy is negative. Nikura states her baby is moving actively today. The FHR is auscultated at 156 bpm and an NST is begun.

43. What characteristics are necessary for a reactive NST for Nikura?
   A. accelerations of 15 bpm above the baseline lasting at least 15 seconds above the baseline
   B. accelerations of 10 bpm above the baseline lasting at least 10 seconds above the baseline
   C. any acceleration greater than 10 bpm above the baseline

44. How long may a standard NST be extended in a term gestation if reactivity is not initially demonstrated?
   A. from the initial 20 minutes to 40 minutes
   B. from the initial 20 minutes to 60 minutes
   C. from the initial 30 minutes to 60 minutes

45. Which is the most appropriate application of vibroacoustic stimulation (fetal acoustic stimulation) in a standard NST?
   A. the device is placed at the top of the maternal fundus
   B. the mother uses a marker button to document the fetal movement response
   C. the stimulation is applied after a baseline is established
Refer to Tracing C-1
Nikura is admitted. An ultrasound and tocodynamometer were placed for fetal heart rate monitoring.

46. Which of the following characteristics are most common in the preterm fetus?

A. increased baseline rate and prolonged accelerations
B. increased baseline rate and variable decelerations
C. prolonged accelerations and variable decelerations

47. What typical characteristics of preterm uterine activity are present in Nikura’s tracing?

A. an irritable uterus with wandering hypertonus
B. low amplitude high frequency contractions
C. tetanic contractions

48. Which medications used with preterm labor can affect the FHR characteristics?

A. terbutaline and antibiotics
B. betamethasone and terbutaline
C. antibiotics and narcotics
49. What characterizes a preterm fetal response to stress?
   A. more frequently occurring late decelerations
   B. more frequently occurring prolonged decelerations
   C. more rapid deterioration from Category I to Category II or III

50. Clinical decision making at the bedside should include:
   A. communication with the primary care provider only during a crisis
   B. integration of physiologic concepts with maternal-fetal assessment findings
   C. reliance primarily on technology over bedside assessments
## Advanced Fetal Heart Monitoring Course
### Test A - Answer Key and Rationales

<table>
<thead>
<tr>
<th>item</th>
<th>answer</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C</td>
<td>Although methods vary, all use some measure of a number of movements over a specific time frame. Counting can begin before 38 weeks.</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>The five components of a BPP are FHR, amniotic fluid volume, fetal movement, fetal breathing, and fetal tone.</td>
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<td>3</td>
<td>C</td>
<td>The AFI was 11, which is not decreased amniotic fluid. The EFW is in the 7th percentile and therefore IUGR.</td>
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<td>4</td>
<td>A</td>
<td>Two umbilical arteries flow from the fetus to the placenta, therefore having only one umbilical artery may result in poor perfusion of the placenta.</td>
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<tr>
<td>5</td>
<td>A</td>
<td>Use of standardized terminology to describe fetal monitoring information can enhance communication among health care providers and promote patient safety.</td>
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<td>6</td>
<td>B</td>
<td>The baseline is 130 bpm, with moderate variability. There is an appearance of episodic accelerations and possibly a deceleration, but the tracing is interrupted.</td>
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<td>7</td>
<td>B</td>
<td>The fetal tracing is interrupted; therefore the ultrasound should be adjusted in order to accurately determine accelerations and decelerations.</td>
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<td>8</td>
<td>A</td>
<td>Moderate variability, accelerations, no decelerations are indicative of a normal Category I tracing at the time they are noted. UC and tonus per TOCO are not distinguishable and require palpation and readjustment.</td>
</tr>
<tr>
<td>9</td>
<td>B</td>
<td>UC and tonus per TOCO are not distinguishable and require toco readjustment since oxytocin is being increased.</td>
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<td>10</td>
<td>C</td>
<td>The bleeding indicates a potential disruption in the delivery of oxygenated blood to the fetus. There is no evidence in this scenario that the saturation or affinity are impaired.</td>
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<td>11</td>
<td>B</td>
<td>The FHR range is 150-170 bpm and the baseline is undulating within that range. This is a sinusoidal pattern which is a Category III tracing. The assessment of uterine tonus by TOCO is not accurate and palpation is required.</td>
</tr>
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<td>12</td>
<td>B</td>
<td>The sinusoidal baseline is suggestive of compromised oxygenation therefore maximizing utero-placental circulation will promote perfusion and oxygenation. The baseline is in the tachycardia range. There is no evidence at this time of cord compression or of uterine tachysystole.</td>
</tr>
<tr>
<td>13</td>
<td>B</td>
<td>The decelerations in the tracing prove challenging to define as either variable or late because of the timing of onset to beginning of the nadir is ( \leq 30 ) seconds and their shape. The fact that they are recurrent, that variability is not marked and no recurrent accelerations are present, guides the decision about what the nurse should report to the physician at this time.</td>
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<td>14</td>
<td>B</td>
<td>There are no accelerations, there is minimal variability and recurrent decelerations are occurring. These findings indicate that the fetus may be hypoxemic.</td>
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<tr>
<td>15</td>
<td>A</td>
<td>Abrupt, variable decelerations are associated with a baroreceptor response. Sympathetic stimulation increases the baseline rate. Catecholamine release increases the FHR.</td>
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<tr>
<td>16</td>
<td>C</td>
<td>Replacing the amniotic fluid will cushion the cord and the single artery, from the compression of normal uterine contractions. There is no evidence that the uterine compression is excessive or that there is a placental abnormality.</td>
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<tr>
<td>17</td>
<td>A</td>
<td>Variability is absent. The FHR baseline is 160 bpm which is not bradycardia.</td>
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<td>18</td>
<td>A</td>
<td>Patient care by the nurse directly working with this mother is the priority at this time. The nurse must enter her own documentation of the conversation. Late entries are appropriate immediately after an emergent situation resolves.</td>
</tr>
<tr>
<td>19</td>
<td>B</td>
<td>A key risk management strategy is to ensure that the members of the neonatal health care team who need to be aware of this patient’s circumstances are informed and prepared to care for the neonate at birth. Although the attending MD was not in the hospital initially, she was responsive and ensured that the resident was at the bedside providing care. Documentation should be accurate, timely and reflect the care provided; but it is not usually not necessary to chart in more than one location. Double documentation may increase the risk of transcription errors.</td>
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<td>20</td>
<td>C</td>
<td>The neonate has previously undetected fetal anemia. The base buffers have been used to buffer acids, not promote oxygenation. Glucose stores have likely been depleted from fetal utilization of alternate metabolic pathways during hypoxemia.</td>
</tr>
<tr>
<td>21</td>
<td>C</td>
<td>The metabolic acidosis criteria include pH &lt; 7.0 and base deficit &gt; 12 mEq/L. Neither asphyxia nor neurologic damage can be determined with the current information.</td>
</tr>
<tr>
<td>22</td>
<td>B</td>
<td>Acidemia is an increase of hydrogen ions in the blood.</td>
</tr>
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<td>23</td>
<td>C</td>
<td>A post-date pregnancy may have declining utero-placental perfusion and less opportunity for oxygen transfer from the mother, so fetal O2 saturation can decrease, not increase. Fetal oxygen affinity decreases (rather than increases) during stress with a shift to the right.</td>
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<tr>
<td>24</td>
<td>C</td>
<td>An AFI of 3 cm is low. Reduced amniotic fluid volume results in decreased capacity to cushion the cord from compression.</td>
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<tr>
<td>25</td>
<td>A</td>
<td>The criterion for a negative CST is the absence of late decelerations or significant variable decelerations. Reactivity is a criterion for the NST.</td>
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<td>26</td>
<td>B</td>
<td>Promoting patient safety in this scenario includes continuous electronic fetal monitoring because Renee is post-dates, has a small amount of amniotic fluid and has had an equivocal CST. Administration of a prostaglandin induction agent also requires continuous FHR and uterine monitoring for proscribed periods of time.</td>
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<td>27</td>
<td>A</td>
<td>Artifact describes irregular variations in the FHR on the EFM tracing; the lines may be irregular with varying lengths.</td>
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<td>28</td>
<td>B</td>
<td>Bradycardia is defined as a FHR below 110 bpm for longer than 10 minutes and that is not the case in this tracing. The variability is not marked. This tracing is a representation of how the mathematical conversion of the time between two beats is displayed on the tracing. When beats are closer, the rate is calculated as higher and the spike goes up. When the beats are farther apart the rate is calculated as lower and the spike goes down. Upward spikes are beats that are closer together because of early cardiac contractions (depolarization of atria-P wave) and downward spikes are beats that are farther apart because of compensatory pauses before ventricular depolarization (QRS complex.)</td>
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<td>29</td>
<td>A</td>
<td>The deviations from the baseline are straight and are spikes and not baseline rate changes, which appear to be an arrhythmia but must be confirmed with auscultation and ideally, M-mode echocardiography.</td>
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| 30 | A | Fever and dehydration can produce fetal tachycardia, but the temperature checked five minutes ago was 98°2. An arrhythmia should be ruled out before replacing the
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<td>FSE which is a more invasive procedure. The FHR should be auscultated with a fetoscope or Doppler to differentiate an irregular heart beat from artifact. The audible EFM signal is not true auscultation.</td>
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<td>31</td>
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