2020 Transfusion Service Competency Quiz

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_

1. Which of the following Rh antigens is found in the highest frequency in the Caucasian population:
2. C
3. E
4. C
5. e-The e antigen is present in 98% of the Caucasian population.
6. Which one of these Lewis blood group phenotypes usually produces anti-Lea
7. Le(a+b+)
8. Le(a+b-)
9. Le(a--b+)
10. Le(a--b-)-This antibody is found in the serum of Le(a-b-) secretors.
11. When testing a patient with a warm autoantibody, which of the following is the most important concern?
12. Masking of other clinically significant antibodies-Reactivity of a warm autoantibody may mask the presence of other clinically significant antibodies which adds to the possibility of a transfusion reaction. Further testing should be performed on the sample to determine if other antibodies are present.
13. Interference of plasma protein with detection methods
14. Detection of donor antibodies
15. Interference of rouleaux
16. The Kleihauer-Betke test used to quantitate FMH has poor reproducibility.
17. True-Despite its widespread use, the Kleihauer-Betke test has poor reproducibility (as well as poor sensitivity).
18. False
19. The Kleihauer-Betke test is used to:
20. Screen for sickle cell anemia
21. Screen for fetal hemoglobin
22. Differentiate between maternal and fetal red cells- The Kleihauer-Betke test allows the differentiation of fetal and maternal red cells. The Kleihauer-Braun-Betke stain is based on the principle that fetal hemoglobin is resistant to acid elution, while adult hemoglobin is not. A smear of maternal blood is treated with acid, rinsed and counterstained. Fetal cells will stain and appear pink. Maternal cells appear as ghost cells. Generally, 2000 cells are counted and the number of fetal cells determined. The hemorrhage is estimated using the following formula: Fetal cells X maternal blood volume\* / Total cells counted = Fetomaternal hemorrhage (mL of whole blood) \* Maternal blood volume is estimated at 5000 mL
23. Screen for hemoglobin A1c
24. If an Rh group (DCe/dce) man marries an Rh group (dce/dce) woman, what is the probablitiy that their first child will be D-negative?
25. 0%
26. 25%
27. 50%- Since the inheritance pattern of the D-antigen is determined equally from the mother's and father's genotypes, the chances of producing a D-negative offspring is 50%. DCe (father) + dce (mother) = D positive dce (father) + dce (mother) = D negative
28. 75%
29. 100%
30. An issued unit of blood may be returned to blood bank inventory if it has not been outside a monitored refrigerator for longer than:
31. 30 minutes- If, for instance, transfusion is delayed, a unit of blood must be returned to a temperature-monitored refrigerator within 30 minutes to maintain the integrity of the blood cells.
32. 60 minutes
33. 2 hours
34. 3 hours
35. 6 hours
36. The McLeod phenotype is associated with which of the following antigen systems?
37. Rh
38. P
39. Kell-  The McLeod phenotype is associated with a decreased expression of Kell antigens on red cells.
40. Duffy
41. MNSs
42. Patients with which of the following conditions would benefit most from washed red cells:
43. Warm autoimmune hemolytic anemia
44. Cold autoimmune hemolytic anemia
45. Elevated serum potassium- Washing not only reduces the number of leukocytes and platelets that are often responsible for febrile reactions, but also eliminates anticoagulants, ammonia, lactic acid, and potassium.
46. Multiple red cell alloantibodies
47. If a pregnant female who was injected with RhIg antenatally has anti-D at delivery, routine antibody titration to determine the titer of the anti-D is considered a good practice.
48. True
49. False- Routine antibody titration is not considered a good practice. If the antibody strength is weak (e.g., 2+ or less, consistent with RhIg administration), titer cannot differentiate between passive and immune anti-D.
50. Rh immune globulin is manufactured to be capable of neutralizing \_\_\_\_\_\_\_\_\_\_\_\_\_ milliliters of Rh positive whole blood.
51. 15
52. 30- Rh immune globulin, also known as RhoGAM, can neutralize approximately 30 mL of Rh positive whole blood.
53. 45
54. 450
55. 1000
56. A patient with a positive DAT due to IgG cannot be reliably antigen-phenotyped using antisera that reacts by the indirect antiglobulin test (IAT).
57. True-A positive DAT precludes antigen phenotyping by IAT. IgG-sensitized red cells will react with the antiglobuin serum whether the cells are antigen positive or negative.
58. False
59. Which of the following represents the approximate percentage of the population that is Rh positive:
60. 35%
61. 65%
62. 85%
63. 95%
64. For which of the following antibodies is the DAT most likely to be negative when testing a newborn for possible HDFN?
65. Anti-A-The DAT is most likely to be negative in ABO HDFN. It's possible that the washing done as part of the DAT may break the bonds between anti-A (or anti-B) and the newborn's poorly developed A (or B) antigens.
66. Anti-c
67. Anti-D
68. Anti-K
69. Anti-Fya
70. What is the proper storage temperature for thawed Cryoprecipitate?
71. 4 - 8 ºC
72. 20 - 24 ºC- Once thawed, cryoprecipitate must be kept at room temperature (20 - 24oC) and used within 6 hours after thawing.
73. 35 - 37 ºC
74. -20 ºC or colder
75. An urticarial transfusion reaction is characterized by:
76. Rapid rise in temperature
77. Difficulty breathing
78. Rash and hives- Urticarial transfusion reactions occur in up to 1% of transfusions. They are manifested by hives, rash, and itching. The transfusion may be resumed after successful administration of antihistamines.
79. Blood in the urine
80. Which of the following antibodies usually show enhanced agglutination with the use of proteolytic enzymes?
81. anti-M,N, and S
82. anti-Jka, Jkb, C, and E- Enzyme techniques are particularly useful in the identification of antibodies in the Rh system (e.g., anti-C and E) and in the Kidd system (e.g., anti-Jka and Jkb). Enzymes destroy some antigens, such as M, N, S, Fya, and Fyb. Therefore the corresponding antibodies would not be detected.
83. anti-Fya and Fyb
84. Given the following commonly used nomenclature systems, which one of the Rh genotypes listed below is heterozygous for the C antigen? WienerFisher-Race (haplotype) RoDce R1 DCe R2DcE RzDCE rdce r'dCe r"dcE rydCE
85. R1r- R1r is the only genotype listed that is heterozygous for the C antigen. Weiner = Fisher-Race R1r = DCe/dce R1R1 = DCe/DCe rr = dce/dce R1R2 = DCe/DcE R2r = DcE/dce R2R2 = DcE/DcE r'r = dCe/dce r'r' = dCe/dCe r"r = dcE/dce r"r" = dcE/dcE R0r =Dce/dce
86. R1R1
87. R2”
88. r”r
89. Which of the following is the MOST likely discrepancy seen when a person demonstrates an "acquired B-like" phenomenon
90. Forward typing appears to be B, but reverse groups like O
91. Forward typing appears to be AB, but reverse groups like A- Acquired B is seen only in a subpopulation of group A1 individuals. The individuals that demonstrate acquired B possess anti-B, but this anti-B does not react with the acquired B antigen; consequently, the auto control is negative. These patients should be transfused with group A or O blood.
92. Forward typing appears to be O, but reverse groups like B
93. Forward typing appears to be B, but reverse groups like AB
94. Forward typing appears to be AB, but reverse groups like B
95. Which one of the following blood group systems may show a cell typing change during pregnancy?
96. Rh
97. MNS
98. Lewis-The Lewis group antigen, Le^a may disappear during pregnancy, resulting in the formation of anti-Le^a antibodies. The majority of these antibodies are IgM and clinically insignificant.
99. Duffy
100. Mosaic
101. For a unit of red cells to be returned to the blood bank for future use it must be maintained at:
102. -20C
103. 1C-10C
104. 20C-40C
105. 30C-37C
106. Naturally occurring antibodies typically have the following characteristic:
107. Fix complement and stimulate extravascular hemolysis-Naturally occurring antibodies are typically IgM, react best at 4°C, agglutinate without need for antiglobulin and fix complement.
108. Require antiglobulin for agglutination
109. React optimally at 37°C
110. IgG subtype
111. Which of the following can be used to enhance agglutination for identification of anti-D:
112. Incubation at 25°C
113. Lower salt concentration in diluent-Low-ionic strength saline solution (LISS) is used to enhance agglutination of alloantibodies.
114. Higher pH of diluent
115. Higher dilution of patient serum in diluent
116. A 30-year-old O negative mother delivered an O positive infant via C-section. The fetal cell screen (rosette test) is negative.

 How many vials (300ug/vial) of Rh Immune Globulin (RhIG) should be administered to the mother?

1. 0
2. 1
3. 2
4. A Kleihauer-Betke test should be performed to determine the dose of RhIG
5. The pattern is consistent with:



1. Warm-reacting autoantibody
2. Antibody directed against a high incidence antigen
3. Single alloantibody
4. Multiple alloantibodies
5. A 35 year old pregnant women is brought to the ER after being in a car accident. The Dr. orders a KB stain, you perform an ABORH and the mom is O Positive, how would you proceed?
6. Call the physician and inform them the mom is Rh positive, no KB stain is needed.
7. Perform the KB stain and calculate the number of vial(s) of Rhig needed regardless of mom’s blood type.