Unit 8 Objectives: Pretransfusion Testing

1. State the primary purpose of pretransfusion testing.
2. List the eight procedures which must be part of pretransfusion compatibility testing.
3. Describe the adverse affects which may occur during transfusion and the causes.
4. List three items which can be confirmed or detected when pretransfusion testing is correctly performed.
5. List three items which directly impact protocols utilized/developed in modern blood banks.
6. State the minimum information which is required on the blood bank request form, optional information, and what must be done when information is missing or illegible.
7. Describe the proper method of documenting and following up verbal blood bank orders.
8. Describe, in detail, the proper method utilized for collection of Blood Bank samples.
9. Describe how blood specimens are labeled in emergency situations, when patients identity is unknown.
10. State the acceptable age and type of specimens utilized in routine blood bank testing, and why serum (or a clot tube) is the specimen of choice.
11. State why some institutions prefer serum over EDTA plasma for routine blood bank testing.
12. Explain why hemolyzed specimens are unacceptable for routine blood bank testing.
13. Describe the unique situation of neonates under four months old in reference to routine testing of their blood samples.
14. State the length of time blood bank samples must be kept after transfusion.
15. State the evaluation process of samples received in the blood bank for testing, including corrective action when samples are deemed unacceptable.
16. Explain the importance of checking previous records for patient information.
17. List and describe the tests which ***must*** be performed on each pretransfusion sample.
18. Define "clinically significant" and "unexpected"antibody.
19. Describe reagent screen cells and their composition.
20. Describe the benefits of the "Type and Screen"protocol and list two types of patients who are candidates for this procedure.
21. State why a crossmatch must be performed if a patient has a positive antibody screen.
22. State the three limitations of the antibody detection test (antibody screen).
23. Describe the history of compatibility testing in determining the types of serological testing now required.
24. Describe the Coomb's crossmatch procedure.
25. Describe the Immediate Spin (abbreviated crossmatch) procedure including the criteria which must be considered prior to implementation and the individual who has final responsibility in making this decision.
26. Describe the computerized crossmatch.
27. List optional testing which may be performed in pretransfusion testing for each of the following: ABO grouping, D typing antibody screen, auto-control and crossmatch.
28. State alternatives blood groups which may be safely given when the blood bank does not have group specific blood.
29. Describe the protocol for giving out D non-type specific blood or components.
30. State the criteria which must be met prior to changing a patient back to their own group specific blood after transfusion with non-group specific blood.
31. Describe how to select blood for patients with unexpected antibodies.
32. Describe the most common technique used for antibody detection in the blood bank.
33. List the criteria used to select methods for detecting antibodies in recipient samples.
34. Explain why greater sensitivity is required in testing recipient specimen's than donor specimens.

35. Explain the importance in consistency in grading agglutination reactions or using notations.
36. Explain the importance of labeling each tube before use and organizational technique.
37. State why many blood banks routinely use three drops of serum instead of two.
38. State the percentage of red blood cell suspensions routinely utilized in blood bank testing and the advantage of using a weaker cell suspension.
39. Describe the saline test and list the antibodies which are commonly encountered using this technique.
40. State the purpose of adding bovine albumin prior to incubation.
41. Describe the advantage of using LISS reagents and the principle of how this reagent enhances antigen antibody reactions.
42. Describe the Polyethylene Glycol (PEG) test and the advantages it has over the albumin technique.
43. List the advantages and disadvantages of using polyspecific AHG in routine antibody detection tests.
44. List the antigens which are destroyed by treating the cells with enzymes (ficin), and how this procedure is beneficial in antibody work ups.
45. State when the antiglobulin technique is required and the criteria to consider when selecting an AHG reagent.
46. State the appropriate use of enzyme techniques.
47. List the antibodies which have enhanced reactivity with enzyme treated cells and the blood group antigens which are destroyed by enzyme treatment.
48. Describe the principle of the low ionic polycation test (Polybrene).
49. State the simplest interpretation of a negative antibody screen and compatible crossmatches.
50. Give three possible explanations for obtaining positive antibody screen and incompatible crossmatches.
51. Outline the steps involved in working up a positive antibody screen and incompatible crossmatches.
52. Explain the possible causes of and method utilized to resolve the cause of a positive autocontrol.
53. State the specificity of commonly encountered cold reactive autoantibodies.
54. Outline the procedures utilized to work up cold reactive antibodies (pre-warmed technique).
55. Describe the serological problems caused by warm reactive autoantibodies.
56. Describe the procedure utilized when rouleaux is present
57. State two problems which may be encountered which are due to reagent related problems.
58. Give the most common cause of having a negative antibody screen and one unit being incompatible, and how to determine that this is indeed the problem.
59. State four other possible causes of obtaining a negative antibody screen and incompatible crossmatch(es).
60. State two causes for obtaining a positive antibody screen and compatible crossmatches.
61. List 5 items of information which must be on the label of blood when it is released to the patient.
62. List the 4 steps involved in issuing blood for transfusion.
63. Define "massive transfusion" and how this situation may occur.
64. Describe why the abbreviated crossmatch is the procedure of choice during massive transfusion.
65. Explain in detail the procedure to follow when uncrossmatched blood must be issued.
66. Define "routine surgical blood orders" and how this is a beneficial protocol.