

## Blood Components Discussion Questions

### Red Blood Cells:

1. At what temperature are red blood cells stored?
2. How much plasma is removed from a whole blood unit to make a CPDA-1 unit? AS unit?
3. What are some reasons a red cell would be frozen?
4. What chemical must be added to the red cell upon freezing?
5. What is the storage temperature of frozen red cell units?
6. What is the expiration on a frozen red cell unit?
7. Once a frozen red cell unit is thawed, how long before it expires?
8. What happens to the following levels in red cells when they are stored over time?
  - a. % Viable Cells
  - b. Glucose
  - c. ATP
  - d. Lactic acid
  - e. pH
  - f. 2,3-DPG
  - g. Oxygen dissociation curve

**h. Plasma K<sup>+</sup>**

**i. Plasma hemoglobin**

**9. What is the function of citrate in an anticoagulant solution?**

**10. What is the function of monobasic sodium phosphate in an anticoagulant solution?**

**11. What is the function of adenine in an anticoagulant solution?**

**12. What is the function of dextrose in an anticoagulant solution?**

**13. What is the expiration for a CPD unit of red cells?**

**14. What is the expiration for a CPDA-1 unit of red cells?**

**15. What is the expiration for an AS-3 unit of red cells?**

**16. What is RBC rejuvenation?**

**17. What components are present in a rejuvenation solution?**

**18. Rejuvenating a red cell will increase the outdate on a red cell how many days?**

*Plasma:*

**1. At what temperature is frozen plasma stored?**

2. At what temperature is thawed plasma stored?
3. What is the expiration on frozen plasma?
4. What is the expiration on thawed plasma?
5. Describe the preparation of plasma from whole blood.
6. What is the definition of Fresh Frozen Plasma (FFP)?
7. What is the definition of FFP, Thawed? Which clotting factors are present in FFP?
8. What is the definition of Thawed Plasma? Which clotting factors are present in thawed plasma?
9. What is the definition of Plasma Cryoprecipitate Reduced or Cryopoor Plasma?
10. What is the definition of Plasma Frozen within 24 hours of collection (FP24)?
11. What are the storage temperatures and expirations on Liquid Plasma?

*Platelets:*

1. At what temperature should platelets be stored?
2. What is the expiration date on a unit of platelets?
3. How long does the donation center have after collection to separate platelets from whole blood?
4. Describe the process of preparing a pooled platelet from whole blood.
5. A unit of apheresis platelets must have a minimum of how many platelets to be acceptable?
6. A platelet concentrate must have a minimum of how many platelets to be acceptable?
7. By how much does one whole unit of platelets (apheresis or pooled) increase the platelet count?
8. What is the minimum pH that is acceptable for a platelet to pass quality control?
9. How does pathogen reduction of platelets work?

**10. How do large volume delayed sampling (LVDS) platelets reduce the bacterial contamination risk?**

**11. If platelets are not pathogen reduced or LVDS, how do we ensure there is no bacterial contamination?**

**12. Why would it be necessary for some patients to receive HLA matched platelets?**

*Cryoprecipitate:*

- 1. Which factors are found in cryoprecipitate?**
- 2. At what temperature is frozen cryoprecipitate stored?**
- 3. At what temperature is thawed cryoprecipitate stored?**
- 4. What is the expiration date on a frozen unit of cryoprecipitate?**
- 5. Describe the process of preparing cryoprecipitate from whole blood.**

6. What is the expiration of thawed cyro that was pooled in a closed system?
7. What is the expiration of thawed cyro that was pooled in an open system?
8. How much fibrinogen and factor VIII is required to be present in one unit of cryo concentrate?

*Granulocytes:*

1. At what temperature should granulocytes be stored?
2. What is the expiration date on a unit of granulocytes?
3. What is the minimum number of granulocytes that must be present in a granulocyte product?
4. How are granulocytes collected?

*Product Modifications:*

1. How many leukocytes does the average red cell unit have (that has not been leukocyte reduced)?
2. What problems can a high number of leukocytes cause in a donor?
3. When leukocyte reducing red cells, what is the maximum level of leukocytes that can remain in the red cell unit?
4. What will washing a red cell unit remove?

5. List the clinical indications for transfusion of a washed red cell unit.

6. What is the expiration of a washed red cell unit?

7. What does irradiation do to a red cell unit?

8. What three conditions must be met for TA-GVHD to occur?

9. What causes TA-GVHD?

10. List the clinical indications for irradiation.

11. Why must donations from blood relatives be irradiated?

12. How does irradiation change the expiration date on a red cell?

*Plasma Derivatives:*

1. What is Rhogam?

2. What factor concentrate is used for the treatment of Hemophilia A?
3. What factor concentrate is used for the treatment of Hemophilia B?
4. What is the plasma derivative albumin used for?
5. What are immune globulins used for?

***Component Labeling:***

1. What information about the blood center processing the unit must be on a unit label?
2. What information about the blood product must be on the component label?
3. What information about the blood product donor must be on the component label?
4. What instructions to the transfusionist must be on the component label?