25. **Why should serum separator tubes not be used for blood bank testing?**

    The gel can contaminate the red blood cells during sampling and can cause false-positive test results.

26. **Name 2 methods that are being used in blood bank testing besides tubes.**

    Column (gel) technology and solid phase red cell adherence (SPRCA). Both of these methods can be automated.

27. **What is the principle of gel technology?**

    Cards containing microtubes are used. Each microtube contains gel particles and a reagent specific for the test being performed. Following addition of serum or cells, the cards are incubated and centrifuged. If agglutination has occurred, the agglutinated complexes are trapped in the gel; non-agglutinated cells settle to the bottom of the microtube. Reactions are scored from 0-4+ depending on the disbursement of the red cells in the microtube.

28. **A gel microtube shows a well-delineated pellet at the bottom following incubation and centrifugation. How should this reaction be graded?**

    Negative.

29. **A gel microtube shows a solid band of red cell agglutinates on top of the gel following incubation and centrifugation. How should this reaction be graded?**

    4+.

30. **What does a mixed field reaction look like in gel?**

    A band of red cell agglutinates on top of the gel and a pellet of unagglutinated cells at the bottom of the microtube.

31. **What are the advantages of gel technology?**

    Better standardization, increased sensitivity, and clearer end-points. Tube shaking, cell washing, red cell resuspension, and antiglobulin controls are not required. Reactions are stable for 24 hours, and photographs of the cards can be stored for later review. Gel technology can be automated. Gels are available for antigen typing, antibody detection and identification, and crossmatching.

32. **How are antibodies identified by solid phase adherence?**

    The patient's serum is added to microplate wells that are coated with a monolayer of reagent red blood cells. During incubation, if antibodies are present in the serum they will attach to the corresponding antigens on the sides of the wells. The microplate is washed to remove unbound antibody, and antiglobulin reagent bound to indicator red cells is added. The microplate is centrifuged. Adherence of the indicator cells to the surface of the well is a positive reaction. If there is no antigen-antibody reaction, the indicator cells settle to the bottom of the well. Microplates with antibody-coated wells are available for antigen detection. Solid phase has been automated and can be used for antigen typing, antibody detection and identification, and crossmatching.