SPECIFIC GRAVITY METHOD FOR ESTIMATION OF HEMOGLOBIN

By Dayyal Dg.

By this method, approximate value of hemoglobin is estimated. This method is simple and rapid. This method is most common in the blood bank for the selection of blood donors...
SPECIFIC GRAVITY METHOD FOR ESTIMATION OF HEMOGLOBIN

By this method, the approximate value of hemoglobin is estimated. This method is simple and rapid. This method is most common in the blood bank for the selection of blood donors.

In this method, a drop of the blood sample is allowed to fall in the solution of copper sulfate having specific gravity 1.053 from the altitude of 1 cm. The hemoglobin concentration of 12.5 g/dl is equivalent to the specific gravity of 1.053. The drop of blood gets covered with copper proteinate and remains separate and distinct for 15-20 seconds. If the drop of blood sample sinks within 15-20 seconds, the specific gravity of copper sulfate solution is lower than the specific gravity of blood sample and the approximate value of hemoglobin is more than 12.5 grams/dl and hemoglobin level is acceptable for the donation of blood. If the drop of blood sample floats, hemoglobin value is less than 12.5 grams/dl and unacceptable for blood donation. However, the concentration of plasma proteins and total leukocyte count also influence the specific gravity of whole blood which may lead false-positive result. In the existence of hypergammaglobulinemia (e.g. multiple myeloma) or leukocytosis (e.g. myeloid or lymphoid reaction, chronic myeloid or lymphocytic leukemia), hemoglobin level will be misleadingly high.