Pre-lab Quiz Results
You scored 100% by answering 3 out of 3 questions correctly.

1. The erythrocyte sedimentation rate (ESR)
   You correctly answered: c. is increased whenever fibrinogen and immunoglobulins cause the RBCs to clump together, stack up, and form a column.

2. The ESR cannot be used to follow the progression of which of the following diseases?
   You correctly answered: d. gingivitis

3. The ESR can be used to evaluate a patient with
   You correctly answered: e. all of the above.
Experiment Results

Predict Question: How will the sedimentation rate for sample 6 (individual with angina pectoris) compare with the sedimentation rate for sample 1 (healthy individual)?
Your answer: c. It will be the same.

Stop & Think Questions:
What is in the beige-colored portion of the sedimentation tube?
You correctly answered: c. plasma

Experiment Data:

<table>
<thead>
<tr>
<th>Blood sample</th>
<th>Distance RBCs have settled</th>
<th>Time elapsed</th>
<th>Sedimentation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5 mm</td>
<td>60 min</td>
<td>5 mm/hr</td>
</tr>
<tr>
<td>2</td>
<td>15 mm</td>
<td>60 min</td>
<td>15 mm/hr</td>
</tr>
<tr>
<td>3</td>
<td>0 mm</td>
<td>60 min</td>
<td>0 mm/hr</td>
</tr>
<tr>
<td>4</td>
<td>30 mm</td>
<td>60 min</td>
<td>30 mm/hr</td>
</tr>
<tr>
<td>5</td>
<td>40 mm</td>
<td>60 min</td>
<td>40 mm/hr</td>
</tr>
<tr>
<td>6</td>
<td>5 mm</td>
<td>60 min</td>
<td>5 mm/hr</td>
</tr>
</tbody>
</table>

Sample 1: healthy individual
Sample 2: menstruating female
Sample 3: individual with sickle cell anemia
Sample 4: individual with iron-deficiency anemia
Sample 5: individual suffering a myocardial infarction
Sample 6: individual with angina pectoris
Post-lab Quiz Results
You scored 100% by answering 3 out of 3 questions correctly.

1. The erythrocyte sedimentation rate (ESR) measures
You correctly answered: d. the settling of RBCs in a vertical, stationary tube of whole blood during one hour.

2. An increase in the ESR is
You correctly answered: c. associated with worsening of anemia.

3. To properly measure the ESR, you need
You correctly answered: c. a 1-hour timer.
Review Sheet Results

1. Describe the effect that sickle cell anemia has on the sedimentation rate (sample 3). Why do you think that it has this effect?

Your answer:
The sickle cell anemia will decrease the sedimentation rate dramatically. This means that the cells do not settle due to their change in shape.

2. How did the sedimentation rate for the menstruating female (sample 2) compare with the sedimentation rate for the healthy individual (sample 1)? Why do you think this occurs?

Your answer:
Menstruating female: 15
Healthy individual: 5

This occurs due to the loss of blood during menstruation.

3. How did the sedimentation rate for the individual with angina pectoris (sample 6) compare with the sedimentation rate for the healthy individual (sample 1)? Why? How well did the results compare with your prediction?

Your answer:
The sedimentation rate for the individual with angina pectoris was the same as for healthy individual. This is because ESR is only elevated in patients with established myocardial infarction, but remains the same in patients with angina pectoris. The result was like my prediction.

4. What effect does iron-deficiency anemia (sample 4) have on the sedimentation rate?

Your answer:
The iron deficiency anemia will increase the sedimentation rate dramatically.

5. Compare the sedimentation rate for the individual suffering a myocardial infarction (sample 5) with the sedimentation rate for the individual with angina pectoris (sample 6). Explain how you might use this data to monitor heart conditions.

Your answer:
MI: 40
Angina pectoris: 5

The ESR will only be increased in established myocardial infarction. In angina pectoris, where there is no necrosis of tissue, the ESR will remain at normal level. This is a way to evaluate the severity of a patients chest pain and indicate if the patient is in a life threatening condition.