Graded Assignment: Liver-Bilirubin Worksheet

You may use any resource available to you to complete this graded assignment. Answers must be posted to blackboard before the indicated deadline to receive full credit.

Total possible points: 13

1. True / False  Aged or damaged RBC is the only source of bilirubin measured in plasma

2. True / False  Unconjugated bilirubin is water insoluble and is bound to albumin for transport through plasma

3. True / False  A positive urine bilirubin by reagent strip and/or ictotest is caused by the presence of unconjugated bilirubin.

4. In the liver, bilirubin is converted to _____ by the enzyme _____
   a. Urobilinogen; glutamate transferase
   b. Conjugated bilirubin; glucuronyl transferase
   c. Direct bilirubin; glutamate transferase
   d. Unconjugated bilirubin; glucuronyl transferase

5. A patient with hemolytic anemia has an increased plasma total bilirubin result. Which of the following test results is most consistent for this patient
   a. Positive urine bilirubin
   b. Decreased urine urobilinogen
   c. Increased plasma conjugated bilirubin
   d. Increased plasma unconjugated bilirubin

6. The highest levels of conjugated bilirubin are seen in:
   a. Pre-hepatic jaundice
   b. Hepatic jaundice
   c. Post-hepatic jaundice

7. A patient with post hepatic (complete) obstruction of the bile duct due to gallstones is expected to have which of the following test results:
<table>
<thead>
<tr>
<th>Serum unconjugated</th>
<th>Serum conjugated</th>
<th>Urine</th>
<th>Urine UBG</th>
</tr>
</thead>
<tbody>
<tr>
<td>bilirubin</td>
<td>bilirubin</td>
<td>bilirubin</td>
<td>UBG</td>
</tr>
<tr>
<td>a. Increased</td>
<td>Increased</td>
<td>Positive</td>
<td>Increased</td>
</tr>
<tr>
<td>b. Increased</td>
<td>Normal</td>
<td>Positive</td>
<td>Increased</td>
</tr>
<tr>
<td>c. Normal</td>
<td>Increased</td>
<td>Positive</td>
<td>Normal</td>
</tr>
<tr>
<td>d. Normal</td>
<td>Increased</td>
<td>Normal</td>
<td>Normal</td>
</tr>
</tbody>
</table>
8. Increased serum lactic dehydrogenase (LD) activity due to an elevation of LD-4 and LD-5 isoenzyme fractions is most likely caused by:
   a. Acute renal disease
   b. Severe liver disease
   c. Hemolytic anemia
   d. Acute myocardial infarction

9. The following test results are most consistent with a diagnosis of:
   
<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alanine aminotransferase (ALT)</td>
<td>65 IU/L</td>
<td>(0-50 IU/L)</td>
</tr>
<tr>
<td>Aspartate aminotransferase (AST)</td>
<td>58 IU/L</td>
<td>(0-50 IU/L)</td>
</tr>
<tr>
<td>Alkaline phosphatase (ALK Phos)</td>
<td>890 IU/L</td>
<td>(40-145 IU/L)</td>
</tr>
<tr>
<td>Gamma-glutamyl transferase (GGT)</td>
<td>575 IU/L</td>
<td>(10-80 IU/L)</td>
</tr>
</tbody>
</table>

   a. Acute hepatitis
   b. Chronic hepatitis
   c. Post biliary obstruction
   d. Hemolytic anemia

10. A 14-yr old has a slightly elevated alkaline phosphatase, compared to the adult reference range, on a chemistry profile evaluating general health. The rest of the results are normal. The most likely explanation is that the child has/is:
   a. Kidney disease
   b. Liver disease
   c. Bone disease
   d. Normal and is actively growing

11. The most sensitive enzymatic indicator for liver damage from acute ethanol intake is:
   a. Alanine aminotransferase (ALT)
   b. Creatine kinase (CK)
   c. Gamma-glutamyl transferase (GGT)
   d. Aspartate aminotransferase (AST)

12. In a patient with hepatic jaundice, the coagulation studies is expected to be:
   a. Normal
   b. Increased
   c. Decreased

13. Which of the following tests would be most useful for assessing the cause of coma in a patient suspected of end stage liver failure
   a. Ammonia
   b. AST and ALT
   c. Alkaline phosphatase and gamma-glutamyl transferase
   d. TSP and albumin