Assignment 7

Due on 2020-03-10, 23:59 IST.

1. Match the type of electrophoresis with the order of their wavelengths:

<table>
<thead>
<tr>
<th>Type of Electrophoresis</th>
<th>Wavelength Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Classic</td>
<td>C, B, D, A, D, C</td>
</tr>
<tr>
<td>(B) Fielding</td>
<td>C, D, B, A, D, A</td>
</tr>
<tr>
<td>(C) Dye-staining</td>
<td>A, D, B, C, D, A</td>
</tr>
<tr>
<td>(D) Buttery</td>
<td>A, D, C, B, D, A</td>
</tr>
<tr>
<td>(E) Buttery</td>
<td>A, D, C, B, D, A</td>
</tr>
</tbody>
</table>

2. Sketch the proper technique of neutron scattering.

   Accepted Answers:
   - Sketch a neutron scattering technique diagram.

3. In the sample preparation of typical construction material to observe the microstructure from getting damaged during processing, ________. To do:

   - Chemical etching
   - Sonic impregnation
   - Carbon impregnating
   - Tapping

   Rs. the answer is incorrect.

4. In the sample preparation of typical construction material to observe the microstructure from getting damaged during processing, ________. To do:

   - Chemical etching
   - Sonic impregnation
   - Carbon impregnating
   - Tapping

   Rs. the answer is incorrect.

5. Measuring power of a microscope is a function of:

   - Waveguide at light level
   - Numerical aperture of lens system
   - Reflective index
   - Magnifying power of specimen
   - Staining efficiency
   - Staining power of explosive mg

   Rs. the answer is incorrect.

6. Which among the following lights gives maximum resolution?

   - Green
   - Red
   - Blue
   - Orange

   Rs. the answer is incorrect.

7. In the case of a dual lens system, the expense and objective are fixed at a finite distance:

   - True
   - False

   Rs. the answer is incorrect.

8. Amorphous materials exhibit birefringence:

   - True
   - False

   Rs. the answer is incorrect.

9. Consider the following statements for the following numerals:

   - Waveguide at light level: 0.9 mm
   - Numerical aperture of lens system: 0.45
   - Reflective index of air: 1
   - Reflective index of water: 1.33
   - Half angle subtended (arc sin 0.9)
   - Calculate the resolution that can be attained using visible light (in mm):

   Rs. the answer is incorrect.

10. Using red light if we want to achieve the same level of resolution as violet light, determine the refractive index of the fluid to be used:

   Rs. the answer is incorrect.

11. Match the following sections between intensity, magnification, and numerical aperture are correct:

   - The intensity of light collected increases the square of magnification
   - The intensity of light collected decreases the square of magnification
   - Intensity increases linearly with numerical aperture
   - Intensity decreases linearly with numerical aperture

   Rs. the answer is incorrect.

12. In reflected optical microscope of PC slides, which phase is seen as the brightest:

   - Quicksilver
   - Crystals of Smalls
   - The ground glass of the flat plate
   - Silk

   Rs. the answer is incorrect.

13. The intensity of light collected decreases the square of magnification

   Accepted Answers:
   - Magnification
   - Numerical aperture

   Rs. the answer is incorrect.