Waves & Electromagnetic Spectrum Review

**Directions:** Use the word bank to answer the following questions. *Each word will be used only once.*

<table>
<thead>
<tr>
<th>Crest</th>
<th>Frequency</th>
<th>Mechanical</th>
<th>Infrared</th>
<th>Trough</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transverse</td>
<td>Radio</td>
<td>Gamma</td>
<td>Wavelength</td>
<td>Longitudinal</td>
</tr>
<tr>
<td>Ultraviolet</td>
<td>X-Rays</td>
<td>Visible Light</td>
<td>Amplitude</td>
<td>Electromagnetic</td>
</tr>
</tbody>
</table>

1. ____________________ waves are used to penetrate solids and are used in doctor’s offices and as airports.
2. ____________________ is the distance between one part of a wave to the same part in the next wave.
3. ____________________ is the number of waves per unit of time.
4. ____________________ waves occur when the motion of the medium is parallel to the direction of the wave.
5. ____________________ waves have a color spectrum known as ROYGBIV.
6. ____________________ waves disturb matter.
7. The ________________ is the top of a wave.
8. The ________________ is the bottom of a wave.
9. ____________________ is the maximum distance that matter is displaced from the resting position.
10. ___________________ waves are produced by stars and galaxies.
11. ___________________ waves occur when the motion of the medium is at right angles (perpendicular) to the direction of the wave.
12. ___________________ waves are often used in heat lamps.
13. ___________________ waves are utilized by insects to locate nectar.
14. ___________________ waves are transverse waves that disturb electromagnetic fields.
15. ___________________ waves have the shortest wavelength and the highest frequency.

**Directions:** Write TRUE or FALSE for each statement below.

_____ 16. Sound waves need a medium to travel.
_____ 17. Electromagnetic waves are mechanical waves.
_____ 18. Waves travel the fastest in gases.
_____ 19. The location of the greatest energy in a longitudinal wave is the compression.
20. The trough of a transverse wave and compression of a longitudinal wave represent the same intensity of energy in a wave.

21. Light waves are an example of longitudinal waves.

22. Visible light seen by the human eye is possible because of light waves being reflected by the surface of an object.

23. Electromagnetic waves bend as they pass through different mediums.

24. Electromagnetic waves travel the slowest in gases.

25. Concave lenses concentrate light waves at a focal point.

26. Eye glasses are an example of concave lenses.

27. Materials through which electromagnetic waves can travel are called opaque.

28. Electromagnetic waves do not need a medium to travel.

29. Sounds waves travel faster than electromagnetic waves.

30. Electromagnetic waves with the lowest frequency and the longest wavelength are radio waves.

31. Ultraviolet waves have a shorter wavelength and higher frequency than visible light waves.

32. X-ray waves carry the most energy of all electromagnetic waves.

Directions: Identify each item below as opaque, translucent, or transparent.

33. Non-tinted car window
34. Socks
35. Wax paper
36. Steel door
37. Milk
38. Tinted car window
39. Ice water
40. Paper bag